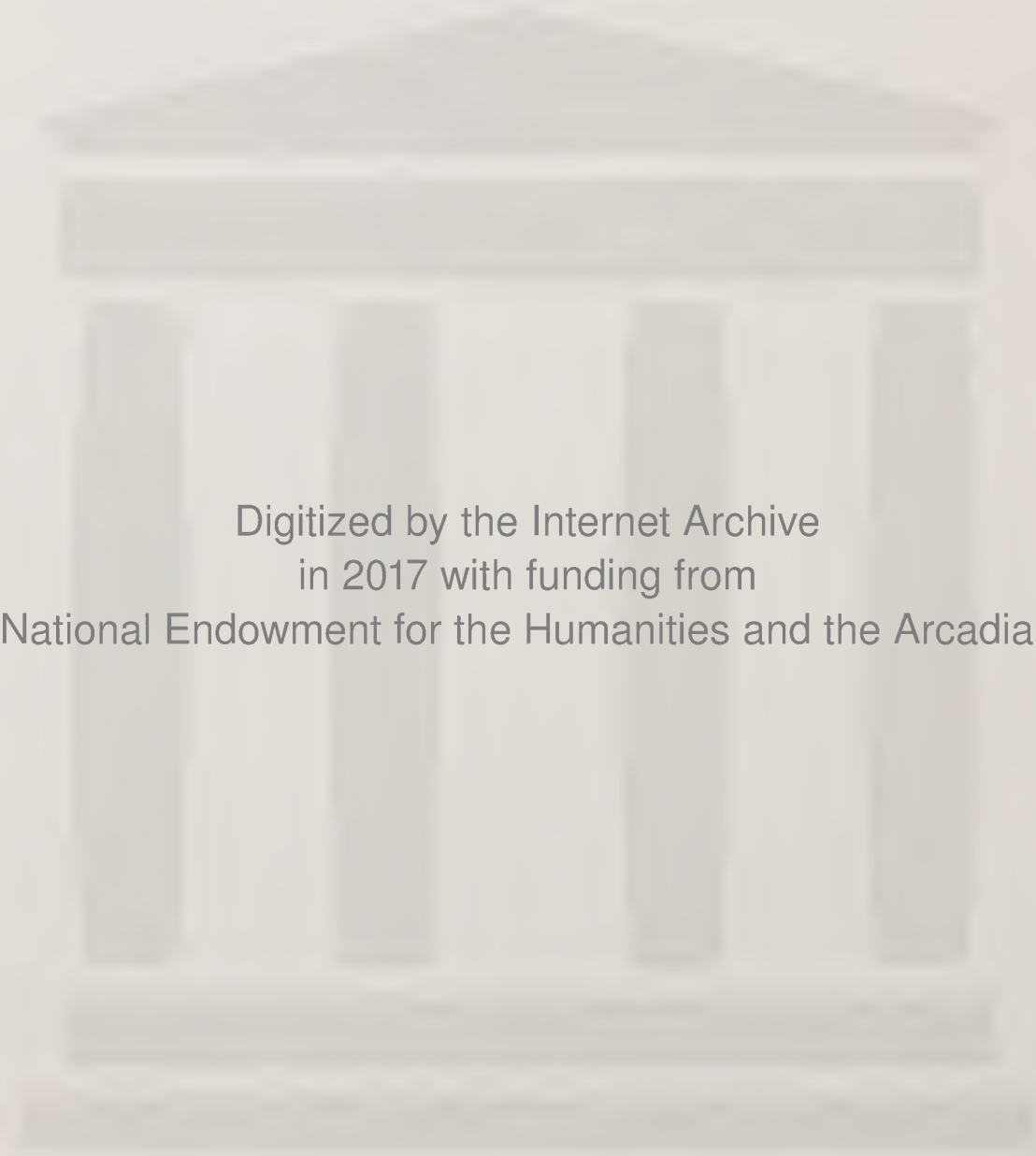
Brown University Library Annex
31236090286488



Digitized by the Internet Archive
in 2017 with funding from
The National Endowment for the Humanities and the Arcadia Fund

https://archive.org/details/hawaiimedicaljou5960hawa

1-SIZE
R15
H25x
SCI

HAWAII MEDICAL JOURNAL

January 2000 Volume 59, No. 1 ISSN: 0017-8594



HAWAII MEDICAL ASSOCIATION 1856



For Commercial HMO

"Excellent"

The National Committee for Quality Assurance (NCQA) has designated ***Health Plan Hawaii's*** *commercial HMO as one of an elite group of health plans to earn its new "Excellent" accreditation status.*

This distinction—shared by only 40 plans nationwide—is awarded on the basis of each plan's commitment to clinical excellence, customer service and continuous improvement.

Needless to say, we couldn't have done it without the outstanding efforts of the more than 1,400 physicians participating with ***Health Plan Hawaii*** *health centers:*

OAHU
Central Medical Clinic
Central Oahu Physician Hospital Organization
Haleiwa Family Health Center
Hawaii Filipino HealthCare, Inc.
Hawaii IPA
Medical Arts Clinic, Inc.
Oahu Physicians Group
Pacific Health Care
Personal Care Network:
- Castle Health Group
- Kuakini Health Network
- St. Francis Physician Hospital Alliance

Straub Clinic & Hospital
The Honolulu Medical Group, Inc.
Waianae Coast Comprehensive Health Center

HAWAII
Bay/Hamakua Health Center
East Hawaii IPA
Hilo Medical Associates, Inc.
Kona IPA
North Hawaii Physicians Group, Inc.
Straub (Hilo & Kailua-Kona)
West Hawaii Physicians Group

KAUAI
Kauai Medical Associates
Kauai Medical Clinic

LANAI
Straub

MAUI
Hawaii IPA—Maui Physicians
The Maui Medical Group, Inc.

Health Plan Hawaii™

A Federally Qualified HMO Affiliate of HMSA

At ***Health Plan Hawaii****, quality is at the heart of everything we do. Our heartfelt thanks to the participating health centers and physicians whose commitment to excellence sets the standard for quality care in our island community.*

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
Vincent S. Aoki MD, Benjamin W. Berg MD,
John Breinich MLS, Satoru Izutsu PhD,
James Lumeng MD, Douglas G. Massey MD,
Myron E. Shirasu MD, Frank L. Tabrah MD,
Alfred D. Morris MD

Journal Staff
Managing Editor: Becky Kendro
Editorial Assistant: Drake Chinen

Officers
President: James Lumeng MD
President-Elect: Philip Hellreich MD
Secretary: Gerald McKenna MD
Treasurer: Charles R. Kelley MD
Paul DeMare MD
Past President: Patricia L. Chinn MD

County Presidents
Hawaii: David Camacho MD
Honolulu: Walter K.W. Young MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Patrick Aiu MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 1999 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 4

Special Contribution
Naoky Tsai MD. 5

Medical School Hotline
Edwin C. Cadman MD. 6

Letter to the Editor 7

eDocs
Stanley M. Saiki Jr., MD 8

A Review of Workers' Compensation Claims: The Frequency of Claim Denial and Medical Treatment Delay
Joselito M. Amparo MPH and Charles R. Kelley MD 11

Learning to Implement the Medical Home in Communities
Calvin C.J. Sia MD, Louise Iwaishi MD, Sharon Taba MEd, and Kristen Darling BSEd 15

143rd Annual Meeting 22

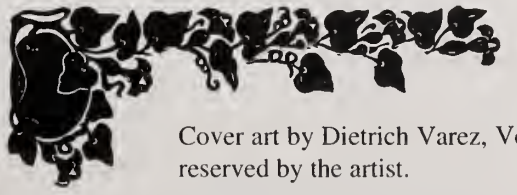
Clinical Topics: Highlights of the HMA Scientific Session
Russell T. Stodd MD 23

Annual Meeting Photos 26

News and Notes
Henry N. Yokoyama MD 30

Classified Notices 33

Weathervane
Russell T. Stodd MD 35



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

Paniolo

A "paniolo" is a Hawaiian cowboy. The word comes from "Spaniard". The Spanish introduced horsemanship and cowboy skills to Hawaii.

Editorial

Peer Review[1]

Norman Goldstein MD
Editor, Hawaii Medical Journal

As readers of the Journal know, our published manuscripts are peer-reviewed. Our Peer Reviewers are the authorities in many specialties of medicine as well as family and general practice.

Our readers also have diverse backgrounds and interests in many fields of medicine. While some of our manuscripts may seem specialized - such as our Special Issues on Ophthalmology, most physicians find some interest in all of our manuscripts. Highly specialized papers are usually not appropriate for our Journal, and are referred to other publications.

Many physicians spend a great deal of time reviewing the manuscripts sent to them by the Journal Editor, and also responding to the reviewers criticisms of their own papers. The Editor and Guest Editors of our Special Issues also spend countless hours, indeed days, fine-tuning the process of manuscript peer review.

As Drummond Rennie MD, Deputy Editor (West) of *JAMA* noted, peer review educates everyone concerned, and is comforting to editors and to the scientific community, who believe that attempts to make what seems to be an arbitrary process more democratic.[2]

In a publication of the Council of Biology Editors, Inc., Peer Review in Scientific Publications,[3] Rennie further states:

> "It is my bias that almost every manuscript that I have handled as an editor has been proved by the scrutiny of reviewers. Some papers have been turned from mediocre to excellent by the extraordinary efforts of dedicated reviewers. At the very least, authors have had the benefit of fresh sets of eyes, and on a few occasions, the reviewers have saved the author from public humiliation. It is also my bias that, though I have witnessed all sorts of misconduct during the review process, from flagrant plagiarism to unconscionable delay, from malicious slander to willful suppression of new ideas, editorial peer review is a process that has been more beneficial than harmful. It is difficult for me to imagine publication without such review, and if orderly review were abolished tomorrow in favor, say, of some enormous electronic bulletin board, I would become disoriented as well as unemployed."[2]

As Editor of the Journal, I have the same bias. I also have had the opportunity to review dozens of manuscripts submitted for publication, as well as an opportunity to expand my personal reading and knowledge in many fields of medicine - not only in my specialty of dermatology.

My personal mahalo to our peer reviewers. We continue to be fair, honest, and expeditious in our evaluation and publication of our manuscripts.

As the interest in our Journal has increased in the past five years, we have received some manuscripts for which we have had no reviewers on our panel. We must expand our Peer Review Panel. If you would like to serve the Journal as a peer reviewer in the following fields, please fax or mail your interest to the Editorial Office fax 808-528-2376.

References

1. Goldstein, N. Editorial, Peer Review. *Hawaii Medical J.* 1997:341.
2. Rennie, D. Problems in peer review and fraud; cleave over to the sunnier side of doubt. In: *Balancing Act: Essays to Honor Stephen Lock, Editor BMJ.* London England; The Keynes Press; 1991:9-19.
3. Rennie, D. Peer Review in Scientific Publishing. Papers from the 1st International congress on Peer Review In Biomedical Publications.

PEER REVIEWERS NEEDED

- ❑ Acupuncture
- ❑ Addiction Medicine
- ❑ Aerospace Medicine
- ❑ Brain Injury
- ❑ Critical Care Medicine
- ❑ Family Medicine
- ❑ Gastroenterology
- ❑ Genetics
- ❑ Gynecology
- ❑ Hematology
- ❑ Hypnosis
- ❑ Insurance Medicine
- ❑ Laparoscopy
- ❑ Legal Medicine
- ❑ Medicine
- ❑ Military Medicine in Hawaii
- ❑ Neonatal-perinatal
- ❑ Neurology-Adult
- ❑ Neurology-Child
- ❑ Nuclear Radiology
- ❑ Nutrition
- ❑ Otolaryngology
- ❑ Otolaryngological Facial Plastic Surgery
- ❑ Pain Management
- ❑ Pathology, General
- ❑ Pharmacology, Clinical
- ❑ Physical Medicine & Rehabilitation
- ❑ Preventive Medicine
- ❑ Psychiatry-Adult
- ❑ Psychiatry-Child
- ❑ Psychosomatic Medicine
- ❑ Public Health
- ❑ Rheumatology
- ❑ Sleep Disorders
- ❑ Sports Medicine
- ❑ Surgery, General
- ❑ Toxiology, Clinical
- ❑ Tropical Medicine
- ❑ Undersea Medicine
- ❑ Urology
- ❑ Other _____

Fax back to Journal Office at (808) 528-2376

or mail to: Hawaii Medical Journal
1360 S. Beretania 2nd Floor
Honolulu, HI 96814

I would like to serve as a Peer Reviewer in the above field(s) of Medicine.

Name _____

Address _____

_____

Phone _____ Fax _____

e-mail _____

Special Contribution

Chronic Hepatitis C Caused by a Virus—Fiction or for Real? A response to an article published in the ABC News Website

Naoky Tsai MD
Liver Center at St. Francis Medical Center
University of Hawaii
2228 Liliha St. #306
Honolulu, HI 96817

The editor of the Journal received a printout of an article that appeared in a news column on ABCNEWS.com which criticized the scientific community for advocating the theory that the current epidemic of chronic hepatitis C is caused by a virus based on flawed scientific fundamentals. The article was sent to him by two of his patients who obviously were concerned about this and its ramifications.

The issues raised by the author, Mr. Nicholas Regush, are the following:

1. The virus C has never been isolated in an intact form.
2. The virus has never been grown successfully in a cell culture.
3. No animal model of hepatitis C caused by injecting this virus has been established.
4. No one has documented that this virus is infectious.

In other words the Koch's principles were not met, and therefore to claim that the current candidate HCV-RNA genome reconstructed through molecular engineering techniques is scientifically unsound and to advocate it to be "the" virus which caused the chronic hepatitis is flawed.

The "virus" that caused the post-transfusion non-A non-B hepatitis has been suspected to be in existence since early 1970's. Through many researchers' works, it is known that this agent or agents that caused this disease are filterable and likely to be RNA virus. The scientists from NIH blood bank and CDC virology section had been collecting plasmas from several chimpanzees that had been repeatedly infected by patient's serum who are believed to be infected by these agents. These plasma were all labeled and kept by Dr. Harvey Alter. For many years since 1975, there were many laboratories around the world sent samples of the agent they believed to be the virus that cause the hepatitis. But all failed the tests set up by Dr. Harvey Alter. In1987, the Chiron Corp. scientists finally identified an antigen that is a fragment of genetically engineered protein product they had identified through a tedious isolation process from infected chimpanzees' plasma. This antigen was able to capture a specific antibody circulating in patients with chronic hepatitis due to transfusion. The antigen was then used to develop a serology test. Dr. Alter then tested the serums kept. The results were published in the Science magazine in 1987. Since then many different laboratories in the world were able to reproduce their findings and the entire genome of this RNA virus was mapped. It is a fact that so far there is no cell culture system in existence to propagate the virus but it has been visualized in the endoplasmic reticulum of infected liver cells under electron microscope. And recently there are two articles published have proved that the full-length complementary DNA clone of HCV can transmit hepatitis in the animal model—chimpanzees.[1,2] In addition, there were many clinical evidences which strongly suggested that this is a real agent which caused about 80~90% of the so-called post-transfusion non-A non-B in the U.S. For instance, both in the U.S. and Japan, the incidence and prevalence of post-transfusion hepatitis C have plunged since the implementation of a screening test for all donated blood. This is a further decline more than the HIV screening of the blood has provided as suggested in the article. This is especially true in Japan where HIV infection is much less than the U.S. Furthermore, clinical experience in my own practice and many of my colleagues who are also engaged in the treatment of chronic hepatitis C, eradication of the HCV-RNA material from serum has not only normalized their liver enzymes but also improved or normalized their hepatic histo-pathology. For those unfortunate patients who relapsed after eradication of the virus, their liver enzymes and liver histology also showed recurrence. These are convincing evidences to implicate that the HCV-RNA is indeed the cause of the hepatitis.

I was able to contact and speak with Dr. Richard Strohman, a molecular biologist at UC Berkeley quoted in the news column. He was very kind in agreeing to discuss with me the issues of his concerns. I believe Dr. Stohman has a point in pure scientific merit that the current scientific evidences, especially without a cultural system and proper animal model, are weak and need more studies to prove beyond any doubt that the HCV-RNA is indeed the cause of hepatitis C. But he agreed with me that this scientific impurity should not stop us, the clinicians, to use this HCV-RNA as a surrogate marker to treat our patients who are at risk of developing end-stage liver disease and hepatic-cellular cancer. And the patients who suffer from chronic hepatitis C should also be aware that the article is arguing for the proper scientific evidences and not that the disease is not in existence. Though personally, I do believe we have the right virus. And the recent studies has shown encouraging evidence that the culture system for the virus may become available before too long.

My qualm with the ABC columnist is that he used sensational language and rhetoric in his article which is, I believe, intended for general audiences who are not savvy in molecular sciences and created a false impression that current chronic hepatitis C disease is nothing but a shibai played by the scientific and medical community in conjunction with pharmaceutical industry for profit. I think this is not what he intended as can be seen in the first paragraph of his article. Scientific news reporting and commenting professionals should take particular care not to mislead readers. This can occur even with careful footnoting, therefore, eye-catching sensational language really have no place in scientific/medical reporting.

References

1. Yanagi M, Purcell RH, Emerson SU et al, " Full-length cDNA clone of Hepatitis C transfected into chimpanzee's liver." PNAS USA 1997; 94:8738-43.
2. Kolykhlov AA, Agapov EV, Blight KJ et al, "Transmission of hepatitis C by intra-hepatic inoculation with transcribed RNA" Science 1997; 277: 570-74.

Medical School Hotline

Vision for the John A. Burns School of Medicine (JABSOM)

Edwin C. Cadman MD
Dean

This is an excellent medical school, but we can become better.

Aspiration and dreams of excellence will require examining what it is we wish our medical school to become. The successes of a medical school are measured in many ways. For a community, the yardstick is often related to the positive influence it has on the well-being of its citizens' health and the impact it has on advancement of science. For a single individual, it maybe how effective someone was at the school in assisting to resolve a personal illness or identify an appropriate referral to a competent physician.

Medical schools are expected to be leaders in many clinical settings. These include the study and evaluation of human health and disease to improve the health of groups of people and to conduct investigations in the basic sciences of the molecular biology of disease. Medical schools provide the clinical leadership in selected areas where innovation and clinical research are required to advance and improve diagnostic capabilities and treatment options. My vision for JABSOM is to become more involved in research activities critical to the future understanding of diseases and become recognized leaders in the burgeoning biomedical revolution.

A challenge will be to include programs devoted to measuring and documenting differences between good patient care and outstanding patient care and communicating these findings to patients and physicians. Physicians must be the paragons of excellence in medical care and communicate effectively with patients and their families. Patients can then learn what excellent medical care is, so that they can become involved in the decision process regarding their diagnosis and treatment.

Medical schools have the responsibility for the leadership in continuing medical education of its faculty, local physicians, and other health care professionals within its region. Some schools have assumed leadership roles in the use of technology in assisting physicians and patients achieve access to medical knowledge and care options. These efforts require enhancement so that JABSOM can become a site of choice for continuing medical education for physicians from the mainland and Asia.

Most importantly, medical schools have the sustaining reputation of being the crucible of new knowledge that affects and advances the understanding of health and disease to improve patient care. The commitment to education is the foundation on which medical schools are built. A significant measure of success can be determined by the quality of students and their future successes in whatever they choose. JABSOM's students are similar in their academic accomplishments from those students in the best medical schools in the country. This School stands out as a leader in its commitment to accepting students from diverse cultural/ethnic background, and has the reputation of being the most ethnically diverse school in the country. We have proven that diversity is an asset.

The School graduated its first four-year class in 1975. Currently, there are 1,554 alumni. Sixty percent of Hawaii's physicians are graduates of JABSOM or trained in Hawaii's residency programs. Last year there were 1,096 applicants for a class of 62, 37% were graduates of the University of Hawaii. Seven were out-of-state residents.

A decade ago, JABSOM began a new curriculum, Problem Based Learning (PBL), a radical departure from the traditional training process, which was two years of lecture followed by two years of practical experience in a hospital and clinics. PBL focuses on specific patient diagnosis or a set of clinical problems from the first day of school. The learning is done in small groups referred to as tutorials of 5 to 6 students supervised by faculty. The focus of these tutorials is to stimulate the student into thinking about information and analyzing data. JABSOM has received national recognition for this program, and the majority of the applicants seek admission because of it. My vision is to build on the successes of this innovative educational program and use the new electronic technology to enhance the educational process. In so doing, segments of the program could be exported to other schools and medical students, as well as to the neighbor islands and the Pacific region.

In addition to excelling in student education and to achieve a national reputation of excellence, a medical school must demonstrate excellence in both clinical and basic research. Fortunately, funds are available from federal and private sources for which we can compete to support our research initiatives. The most outstanding medical schools generate dollars from national funding sources and are not dependent on state funds for all of their support. The National Institutes of Health (NIH) is a federal agency whose major purpose is to support biomedical research, mainly through a competitive grant process. It has a budget of 15.7 billion dollars; and, both the Republicans and Democrats are committed to doubling this funding over 5 years. In the 2000 budget, there is an additional 2.3 billion dollars earmarked for the NIH, which will bring the total NIH spending authority to 18 billion dollars. Private foundations such as the American Cancer Society, American Heart Association, American Diabetes Association, the Howard Hughes Medical Institute and pharmaceutical companies contribute in excess of 50 billion dollars towards the nation's biomedical research efforts. My vision is to recruit physician-scientists, as well as basic science investigators, who can compete successfully for these dollars. Faculty will be recruited whose research will influence the future of how we think about normal and abnormal conditions. From laboratory discoveries, we can improve our diagnostic capabilities and treatment options. The future will include better identification of people at risk for disease and illness; and, therefore, a key component of our school's future will include prevention strategies.

Biomedical and clinical research is an industry that can become an economic engine. Successful investigators bring new dollars into a region and state through their grants and contracts. In many instances, these can average 1-2 million dollars annually for each research team. These research teams will hire support staff, including research technicians, administrative personnel, and provide the training opportunities for young scientists and physicians who will be the future faculty and practitioners. Added to these immediate

benefits, discoveries made in these laboratories will often be the genesis of new small biotech companies that develop in the surrounding communities.

Currently, many of JABSOM's faculty are leaders in their chosen fields of investigation, but more are needed. An infrastructure will be provided so that faculty, current and future, can become even better at what they do in the context of a long-range strategic plan that establishes the areas of excellence.

By establishing high goals and looking beyond the nearest horizon, JABSOM can achieve a national reputation for excellence in many areas. An outstanding medical school sets the standards of health care expectations. We can become outstanding, and we will! As your Dean, I look forward to communicating with you and our community to demonstrate the value and impact of the John A. Burns School of Medicine on our State and region.

Letter to the Editor

To: Russell T. Stodd MD, editor of the Weathervane Column and members of Hawaii Medical Association
Re: Article about John M. Zelko MD (Sept. 1999, Vol. 58, No. 9)

I received a copy of the September issue of the Hawaii Medical Journal and read the article about my dad in the "Weathervane" section. I wanted to personally thank Dr. Stodd for including the article and thank all the members of the Hawaii Medical Association who supported my dad though his ordeal with the DEA. Indeed it was a farce, but it hurt him deeply. He was a kind, giving individual who strived to take care of each person as if they were part of the family.

Dr. Zelko's family is deeply grateful for all your support and for the recognition in the "Weathervane" section of the Hawaii Medical Journal. We hope the community will remember him for his dedication to excellence and his desire to improve peoples' lives. Thanks again.

Sincerely,
Steven Zelko MD

American Heart Association®
Fighting Heart Disease and Stroke

Help Your Heart Recipes

This recipe is intended to be part of an overall healthful eating plan. Total fat intake should be less than 30 percent of your total calories for a day — not for each food or recipe.

Chocolate Oatmeal Cookies

- 1½ cups firmly packed light brown sugar
- ½ cup sifted unsweetened cocoa powder
- ½ cup fat-free milk
- ¼ cup light margarine, softened
- ¼ cup pureed prunes, unsweetened baby food prunes, or fat-free fruit-based oil and margarine replacement
- 2 teaspoons vanilla extract
- 1¾ cups all-purpose flour
- 2½ teaspoons baking powder
- ¼ teaspoon salt
- 1½ cups uncooked quick-cooking oatmeal

Preheat oven to 350° F.

In a large mixing bowl, cream brown sugar, cocoa powder, milk, margarine, prunes, and vanilla. In a small bowl, sift together flour, baking powder, and salt. Beat into margarine mixture. Stir in oatmeal.

Drop by teaspoonfuls onto ungreased baking sheets. (You should have about 60 cookies.)

Bake for 7 to 9 minutes, or until set in the center.

Serves 30; 2 cookies per serving.

Nutrient Analysis per Serving

105 kcal	Calories	**0 mg**	Cholesterol	**0 g**	Saturated Fat
2 g	Protein	**77 mg**	Sodium	**0 g**	Polyunsaturated Fat
23 g	Carbohydrates	**1 g**	Total Fat	**0 g**	Monounsaturated Fat
1 g	Fiber				

American Heart Association Cookbook, 6th Edition, ©1998. Reprinted with permission from Times Book, a division of Random House, Inc., New York.
Visit our Web site at: http//www.americanheart.org/.

PHYSICIANS
Air Force Healthcare. Good Pay. Professional Respect.

Why Do You Think We Say "Aim High"?

Experience the best of everything. Best facilities. Best benefits. Outstanding opportunities for travel, 30 days vacation with pay, training and advancement.

For an information packet call
1-800-423-USAF
or visit www.airforce.com.

You'll see why we say, "Aim High."

AIM HIGH
AIR FORCE
HEALTH PROFESSIONS

eDocs

Book Review and Commentary: Digital Doctors[1]

by Marshall de Graffenreid Ruffin, Jr. MD, MPH, CPE, FACPE, 220 pp. Tampa FL, Published by the America College of Physician Executives 1999
ISBN 0-924674-63-6

Stanley M. Saiki Jr., MD
Chair, HMA Computer Committee

Introduction

Well, it's been awhile since I sat down to do a book report. Come to think of it, the last time was in college. The stalling part seems about the same. Finding all manner of excuses to put off actually sitting down to do my "homework" brings back many fond memories. Procrastinating even as I actually start writing, I bask in the warm memories of my college years and comrades with whom I've long since lost contact. Life long loyalties are built in the shared experience of hanging out at the Dorm and Commons with all the other guys and gals trying to avoid homework. There is something different though, a curious feeling that somehow this is not as difficult as it used to be. I would like to think that it is now easier because of all the years of accumulated knowledge and wisdom. Perhaps I am getting smarter after all? With disappointment, I realize that it is now easier because, NOW I CAN TYPE!! Well, not really, but I can sit at a keyboard with a word processor and make the words struggle out. The last time I did a book report I used an IBM Selectric and a whole box of correction tape. At the time I thought the correction tape was the greatest invention in the history of inventions.

It seems to me this is very unfair. College was a lot of work, it would have been a lot easier if I had this computer. Come to think of it, the kids must have it pretty easy now. As I write, little red lines show up telling me to correct spelling and little green lines show up telling me to correct grammar and punctuation. Sometimes the misspelled words and capitalization errors are magically and instantly fixed without me doing anything. The Punctuation Police must have a branch office in my machine. The dictionary is only a right click away, the thesaurus only a quick trip to the menu bar and the Internet search engines just a few key strokes away. I don't even have to get up from my chair. Maybe I should really get serious and crank up "Dragon Dictate," my voice recognition program. On second thought, I don't feel up to wrestling the Dragon today. He's really not well trained.

The kids can see how powerful computers are and how technology makes life easier. They look on it as fun, and they can have power over adults! They can see the future of computing because they are not blinded as we are by techno-phobia, inflexibility and "pound foolish" frugality. Tragically, some adults see the need to evolve but feel they can't. Clearly there is great power in the new technologies, power to help us cope with the challenges of providing health care in our hostile environment. The haunting theme of Digital Doctors rings true; the world is changing, adapt or die.

Digital stereos, digital cameras, digital cell phones, digital scanners, digital x-ray, digital books, digital movies, the whole world is going digital. Digital Docs? The only digital I learned in medical school was the digital rectal exam. Marshall Ruffin's "Digital Doctor" is the physician who invests in personal and organizational "intellectual capital" to enable the use of digital computers and communications to do "the job" better.

Overview

For those named above, the "tragic" ones, those that see the need to internalize digital computing technology, but do not know how to start, this book is not the answer. If you appreciate the imperative need for each of us to master the skills of the digital age and the wide ranging, possibly apocalyptic implications of the power of digital information in health care; move on, go learn something useful. If you are a skeptic, don't think the digital age will affect you or your business in health care, feel your practice can survive because you possess the 3 A's (able, available, affable) or if you your billing on a peg board, you must read this book.

As a proponent for the digital revolution of health care I can sometimes get pretty "preachy" and hard to take. Ruffin's book, in this respect, is hard to take as well, even for me. He is frankly evangelistic about the power of computers and digital technology to revolutionize all areas of health care. The work is clearly written with consideration of a physicians' point of view; an amalgam of insight, crafted from his training in business (MBA), population and behavioral subjects (MPH) with the practical point of view of the physician executive. He displays ample bedside manner with the gentleness of a true physician when discussing the current morbid state of our profession. He is forthright in his prescription of bitter medicine and is supportive and compassionate in his discussion of our "illness."

Compassion notwithstanding, Ruffin's perspective as a "physician executive" is focus of Digital Doctors. Neither fish nor fowl, the physician executive walks the line between management and what will soon be "labor." Is the physician executive one of us, or have they crossed the line to management? As we continue to lose control of our profession, business and destiny, our physician executive could lead us to into the light or keep us docile in our servitude. Ruffin believes the physician executive will be our savior, showing us the way to regain control of medicine to assure quality health care, all the while staying under budget. This physician executive, a Digital Doctor, will have learned the skills of the digital age and will use the power of information to help physicians truly manage care rather than the current system of "managed cost".

Section I – Brave New World

This first of 4 sections in the book lays some of the ground work for understanding the effect of the digital age on medicine. Ruffin starts with a discussion of Informatics. He defines informatics as "an emerging science that studies the application of computing and communication technology to decision making for clinicians and mangers." He follows with an interesting discussion to clarify the definition using good examples and interesting facts.

The Computerized Patient Record is introduced as the future of informatics and the ultimate goal for medical information collec-

tion. Large shared data repositories will allow "data warehousing" and "data mining," the latest buzzwords of the management wonks, require large amounts and varied types of accurate information to be useful. Currently "claims made" data, information gleaned from insurance payment requests, are the best source. These data, currently used to manage cost, is not nearly good enough to comprehensively manage care. The Computerized Patient Record or Electronic Medical Record is the tool best suited to gather information required for true managed care. Ruffin does a good job detailing why this is so and describes the advantages and barriers to the widespread use of the computerized patient record.

Ruffin believes that physicians and physician executives (he calls them providers) will regain control of clinical care and their economic futures. He feels the computerized record is a powerful tool to this end. He does present a balanced view when he quotes from Collen in the Journal of the American Medical Informatics Association: "It will be increasingly clear that whoever owns the computer-based medical patient records, with their wealth of data about clinical processes and outcomes, controls patient care. Large insurer-owned, for-profit MCP's (managed care plans) will continue to expand their control over their contract physicians' clinical practice by exploiting clinical data."[1] Ruffin exposes the double-edged sword of data collection.

Section II – Expanding Horizons

Ruffin turns next to a fascinating and instructive discussion of the evolution of personal computers and the Internet. He illustrates the inexorable, rapid pace at which technology has developed and the amazing and progressive acceleration of this pace. The interesting and informative examples enlighten the reader.

Compelling reasons are presented to suggest that the Internet through the World Wide Web will play a central role in medical telecommunication in the future. WWW technology will be the medium for medical information transfer and the computerized patient record. Conceptually this is easy to accept. It is a little different story when I sit in front of the monitor waiting for pages to download or can't log on to my mail server. Will I trust this in a mission critical application? With more people coming on line and traffic growing every minute? I even got a cable modem that is so bad I've given up and have gone back to the phone dial-up. They are working on Internet II and III, perhaps I will believe it then.

There is an informative section on informatics and health care WWW sites. Some practical value here and an interesting suggestion as to how "push" technology could be used to individualize web provided information to each patient. The ability to send information tailored and relevant to the individual patient would be quite useful in the preventative medicine environment.

Section III – New Structures for Health Care Delivery

Organized Care: the next step? Ruffin predicts that large organized regional healthcare networks that share financial risk while providing for the health care needs of a community is the shape of healthcare organizations of the future. He expects that all healthcare providers will assemble in these large regional integrated systems. When this happens units can share data and move from the current managed cost called Managed Care to "Organized Care".

Certainly in the perfect world this would be the logical thing to do. Of course, in college we all thought communism was a logical way to do things as well. Ruffin senses this skepticism and concedes: "The payers will always have a role in organizing and managing care because most physicians cannot agree to share capital and management to create organized care systems. I hope that the profession of medicine recognizes its opportunity to lead the management of the health of populations the way in which it leads the treatment of disease in individuals."

The conceptualization of the Organized Care Systems by Ruffin is complete and elegant. He conscientiously describes the importance of informatics in the transition from Managed Care to Organized Care.

Section IV – Implications for Providers and Provider Organizations

Changes in the healthcare environment in the past 10 – 15 years have been staggering with more change on the way. Powerful indeed is the motive force of this change. The almighty dollar, in this capitalist paradise, an irresistible force, a force far from spent. Ruffin does an excellent job of reminding us of the forces and agendas involved. He goes further to discuss how digital technology and the organized care systems can help us adapt to this juggernaut of change.

Physician Profiling is discussed in this section. The point is well made that profiling will and does occur and that it has been supported as a process by the courts. Economic credentialing is a distasteful fact of life. Ruffin recommends that physicians accept this as reality (after all the lawyers and bean counters have) and learn to adapt to the changing environment. Since the process is inevitable he recommends that physicians try to get profiled. "I suggest that physicians try to get profiled and insist that the organizations in which they work or the systems of care in which they see patients invest in staff and information systems to profile them." "Sharing the data with clinicians in an educational way is the key to successful cultural change." "Physicians are learners."

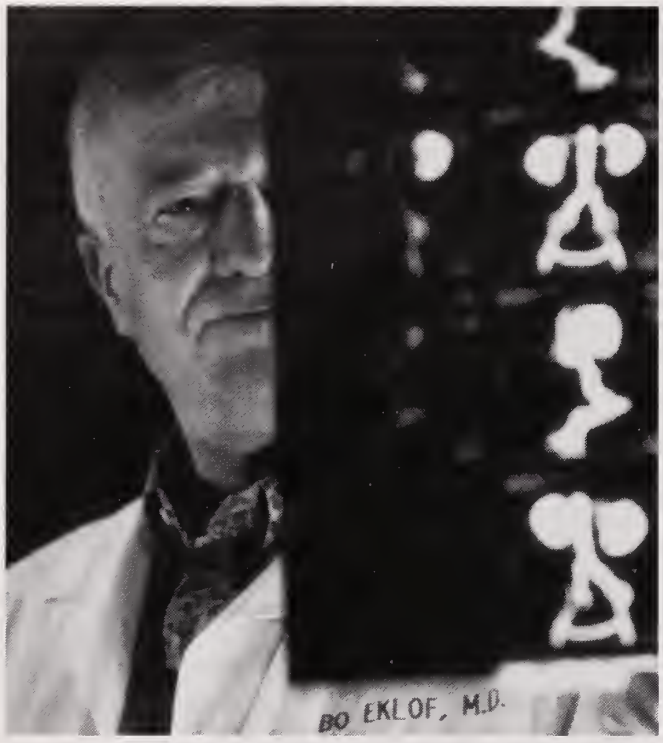
Conclusion

Though distracting and frustrating, we ignore the "business" of medicine at our own peril. We are in an unstable dangerous environment in which the way we do business affects our ability to care for patients as well as our livelihoods. Far reaching changes will have to be dealt with both on an individual and on a group basis. Computing and telecommunications innovations are enabling technologies that could significantly affect our ability to survive and prosper. Both the technology aspects and the managed care/ managed cost issues are well discussed in this book.

Reference

1. Collen, M. "A Vision of Health Care and Informatics in 2008." *Journal of the American Medical Informatics Association* 6(1):1-5 Jan.-Feb. 1999

Join us in the quest for continued medical excellence.



Join your Straub colleagues as we strive for continuing medical excellence.

Straub Clinic & Hospital, Inc. is accredited by the Hawaii Medical Association to sponsor continuing medical education for physicians.

Straub designates this educational activity for a maximum of one credit hour in Category 1 of the Physician's Recognition Award of the American Medical Association. Each physician should claim only those hours of credit that he/she actually spent in the educational activity.

Straub
When it really matters
Visit Straub's homepage at http://www.straubhealth.com

You are invited to attend...

– Friday Noon Conference –
Luncheon

Influenza: The Old and the New

Roy S. Adaniya, MD
January 14, 2000, 12:30 - 1:30 p.m.
Doctors Dining Room

Learning Objectives

At the conclusion, participants should be able to:

- Understand the biology of influenza virus, and why epidemics and pandemics can occur.
- Gain knowledge of the real potential danger of flu, and flu pandemics.
- Manage clinical symptoms and prevent complications of flu with Neuraminidase inhibitors.

We would like to acknowledge the Educational Grant from GlaxoWellcome.

– Friday Noon Conference –

How to Give a Deposition

William Tsushima, PhD
January 21, 2000, 12:30 - 1:30 p.m.
Doctors Dining Room

Learning Objectives

At the conclusion, participants should be able to:

- Deal with difficult questioning by an attorney.
- Gain knowledge on how to prepare for a deposition.
- Manage patients pain syndromes effectively by utilizing existing standards and assessment tools.
- Understand differences between courtroom testifying and deposition.

– Friday Noon Conference –
Luncheon

Update on Oral Agents in the Treatment of Erectile Dysfunction

Stephen K. B. Chinn, MD
January 28, 2000, 12:30 - 1:30 p.m.
Doctors Dining Room

Learning Objectives

At the conclusion, participants should be able to:

- Describe newest alternative oral agents for erectile dysfunction.
- Interpret most recent trial data on oral erectile enhancement agents.
- Management of erectile dysfunction.

We would like to acknowledge the Educational Grant from Pfizer Pharmaceuticals.

Please call Fran Smith at 522-4471 for more information.

A Review of Workers' Compensation Claims: The Frequency of Claim Denial and Medical Treatment Delay

Charles R. Kelley MD and Joselito M. Amparo MPH

Abstract

A retrospective chart review of 257 patients who presented between January to March 1998, was conducted to identify the frequency of workers' compensation claim denial among patients who reported to Straub Clinic and Hospital. Results showed that 12.8% of claims were either "denied" or temporarily "denied pending investigation". Analysis of all the claims found that only 2% resulted in delayed medical care. Further analysis of the denied claims revealed the vast majority of claims (78.8%) were denied because the medical provider and the patient had incorrect workers' compensation carrier information. Other independent variables studied (size of the employer, category of employer, injury type, status of case, length of case and number of visits) did not predict either denial of the claim or treatment delay. This study suggests that the efficiency of our State's Workers' Compensation system would be greatly improved by developing a system to provide medical care providers with accurate insurance information.

Introduction

The processing of workers' compensation claims in both the private and public sectors must adhere to Hawaii State laws. In order for a claim to be properly submitted and processed, multiple steps and parties are involved including the injured worker, supervisors, physicians, human resource personnel, and claims managers. Any errors or breaks in the chain of this process can result in a "denial" or a "denial pending investigation" of the employee's claim. The process of filing a claim can be briefly outlined in the following manner. When an employee believes that a work related injury occurred, they must immediately notify the employer. Often the employer requires the employee to fill out an accident report. The employer then uses this information to create a WC-1 form which is mailed to the insurance carrier. Upon receiving the WC-1 form, the insuring agency assigns an "adjuster" to the claim. The adjuster is responsible for reviewing the claim and deciding if the claim should be accepted or denied. When the injured employee visits the medical provider, they must tell the provider how the injury occurred, the nature of the injury, and the relevant billing information, such as the name of the employer and the name of the insurance carrier.

Correspondence to:
Joselito M. Amparo
2333 Kapiolani Blvd., #2006
Honolulu, HI 96828

Surprisingly, employees often do not know the proper name of their employer and they rarely know the name of the workers' compensation insurance carrier. After the office visit and treatment, the health care provider is required to submit to the insurance carrier a completed WC-2 form along with the medical reports, bills for services rendered, and in some cases a treatment plan. Health care providers in our community often complain that the claims they are submitting are being rejected with alarming frequency. They also worry that rejected claims are resulting in delayed medical care, poorer treatment outcomes, and excessive litigation.

This study is a retrospective review of workers' compensation claims to determine the frequency of claims denial and the frequency of delayed medical care. The study also explores what independent variables may predict denial of claim. Variables explored include: the size of the employer, the type of employer, the type of injury, the status of the case, the length of the case, and the number of visits made.

Methods

In this study, a retrospective chart review of the medical records of 257 patients who reported to the Straub Clinic and Hospital from January to March of 1998 was conducted. Each record was examined for information on the occupational injury case noting the type of injury, the status and length of the case, the number of visits, the size of the employer, and the type of employer. Records were also examined for any written evidence of denial or medical treatment delay of each claim. Medical treatment was defined as delayed if the additional treatment requested by the physician exceeded a period of ten days from the time the request was submitted to the insuring agency up until the time of treatment. A brief phone interview of each employer was done to verify relevant facts about the size of employer and type of business in which the workers' compensation case took place. All data was recorder manually on data sheets and subsequently entered into a computer for analysis. The statistical program Epi-info was utilized to analyze the data in an attempt to find any pattern of association with acceptance and denial. A p-value of < 0.05 was used as the cutoff for significance.

Results

257 medical records of workers' compensation cases were reviewed. Of the cases examined most were already closed (231/257). It was also observed that most cases (63.6%) were brief with physicians closing the case within one month of the date of injury (Table 2).

Of the 257 medical records reviewed, 224 (87.2%) were accepted by the insurance carrier and 33 (12.8%) were denied at some point during the history of the case (Table 1). In searching the medical record for why claims were denied it was found that the most common reason (78.8%) for denial was "wrong carrier". This means that the health care provider sent the medical bill to the wrong insurance carrier. Four cases (12.1%) were judged by the carrier as not workers' compensation cases, and three (9.1%) were "denied pending further investigation" implying that the carrier was delaying decision until further facts about the case could be obtained and reviewed (Table 3). Evidence of treatment delay was identified in only 6/257 (2%) cases (Table 4).

During the chart review, claims were categorized by the type of injury to estimate the relative frequency of different injuries (Table 5). The most common type of injury was contusions/sprains/strains which included injuries such as back pain, shoulder pain, knee pain and ankle pain. The least common type of injury was emotional stress.

Statistical analysis of the data was sought to determine what independent variables were associated with claim denial. There was no significant association between denial and employer size (greater or less than 50 employees), employer category (public vs. private employer), the type of injury or the length of the case (< 1 month, 1-3 months, > 3 months).

Table 1.– Frequency of Claim Denial

Claim	#Cases	Percent
Accepted	224	87.2%
Denied	33	12.8%
Total	257	100.0%

Table 2.– Relative Frequency: Lengths of Closed Cases

Claim Length	Frequency	Percent
< 1 Month	147	63.6%
1 to 3 Months	57	24.7%
> 3 Months	27	11.7%
Total	257	100.0%

Table 3.– Reasons For Claim Denial

Reason	Frequency	Percent
Wrong Carrier	26	78.8%
Not Workers' Comp	4	12.1%
Denied Pending Futher Inv.	3	9.1%
Total	33	100.0%

Table 4.– Frequency of Medical Treatment Delay

Delay	Frequency	Percent
No Delay	251	97.7%
Delay	6	2.3%
Total	257	100.0%

No Delay: <10 days
Delay: > = 10 days

Table 5.– Relative Frequency of Injury Types

Injury Type	Frequency	Percent
Burn	10	4%
Exposure	15	6%
Laceration	54	21%
Contus/Sprain/Strain	125	48%
Fracture	11	4%
Repetitive Motion	5	2%
Stress	3	1%
Other	35	14%
Total	257	100.0%

Discussion

The purpose of this study was to determine how frequently the medical treatment of an injured worker was denied or delayed by the insurance carriers and what factors might be associated with those outcomes.

Results of the study demonstrate that medical bills submitted through the workers' compensation system are frequently denied (12.8%). The most common reason for denial was that the medical bill was sent to the wrong carrier. Experience with reviewing charts suggested that this is a relatively insensitive way to detect denial as details pertaining to the situation are often not well documented in the medical record. As such, the results of this study may underestimate the true incidence of claim denial. Fortunately, it was only very rarely that medical care was delayed. It is logical to assume that a substantial amount of time is being spent by physicians and their personnel straightening out billing errors and resubmitting bills. This also means that the efficiency of Hawaii's workers' compensation system could be markedly improved by developing a better method for informing physicians of a company's proper insurance carrier. The current system, which relies upon the injured worker to know the correct information is demonstrably unreliable. On one hand, employers should recognize that it is in their best interest to develop better methods of communication so that every employee always knows how to identify the proper carrier during all working hours. On the other hand, it would benefit our state as a whole to develop a data-base accessible to all medical providers, that contains

the necessary billing information. Such a system would improve efficiency, reduce treatment delays, and possibly reduce litigation.

The study was also designed to investigate what factors are associated with, and might predict denial of a claim. It would be reasonable to assume that more expensive claims such as back injuries, would be denied more frequently. This was not observed. There was no significant association between claim denial and any of the factors studied (injury type, employer type, employer size, status and length of case, and number of visits). This implies that each case is judged on its individual merits. The study did not explore whether some specific insurance companies deny cases more frequently than others which is an intriguing question for future study.

This study also sought to determine how frequently medical treatment of an injured worker was delayed and what factors might be associated with this outcome. The results showed that medical care was rarely delayed (only 2.3% of all cases) and that treatment delay was not related to the size of employer or type of injury.

In summary, this study documents that a substantial number of medical claims submitted by physicians for treatment of patients with workers' compensation injuries are being denied by insurance carriers. The most common reason for case denial was the submission of bills to the wrong insurance carrier. This study concludes that the efficiency of our workers' compensation system would be greatly improved by developing a system to provide physicians with accurate insurance information.

References

1. Hawaii The Auditor, *Study of Workers' Compensation Process for State Employees.* Report No. 96-5, January 1996
2. Hood J, Hardy Jr. B, Lewis Jr. H. *Workers' Compensation and Employee Protection Laws.* West Publishing Co., St. Paul 1990
3. Lencsis P, *Workers' Compensation: A Reference Guide.* Quorum Books, Westport 1998
4. Kramer O, Briffault R. *Workers' Compensation: Strengthening the Social Compact.* Insurance Information Institute Press, New York 1991
5. State of Hawaii Dept. of Labor and Industrial Relations Research and Statistics Office. *Workers' Compensation Data Book - 1998*
6. U. S. Department of Labor. *State Workers' Compensation Administration Profiles.* October 1997

FIVE WAYS TO DIE ON THE GOLF COURSE:

1. Hit by a golf ball.
2. Run over by a golf cart.
3. Whacked by a golf club.
4. Struck by lightning.
5. Forgot your hat.

Surprisingly, one million new cases of skin cancer are detected every year. One person an hour in the U.S. dies from melanoma, the deadliest form of skin cancer. If you spend a lot of time in the sun, you should protect yourself. One out of five Americans develops skin cancer during their lifetime. Don't be one of them. Stay out of the midday sun. Cover up. Wear a hat. Seek shade. And use sunscreen. For more information on how to protect yourself from skin cancer, call 1-888-462-DERM or visit www.aad.org.

AMERICAN ACADEMY OF DERMATOLOGY

Cloth seats or leather? What color? And how about wood-toned trim?

How about seven Bose speakers? Want to add a CD?

How about letting in some Hawaiian sunshine with a sunroof?

Let's see, what color? Icelandic Pearl, Sherwood Green or Super Black? And there's lots more to choose from.



Build Your Own Luxury Sedan at

www.maximahawaii.com



Hey, the possibilities are endless. And you can actually build your 2000 Maxima at www.maximahawaii.com on your own time with nobody looking over your shoulder. Except maybe your little dog, Dusty, who's pretty nosy anyway. So, go ahead. Build your own luxury sedan. Without even getting any dirt under your fingernails.

NISSAN

DRIVEN.

www.maximahawaii.com

New City Nissan - Ala Moana 524-9111 • Tony Nissan - West Oahu 671-2611 (Waipahu) • Tony Nissan - Pearl City 487-1133
Infiniti - Nissan Motor Sales - Honolulu 836-0848 (Airport) • King Windward Nissan - Kaneohe 235-6433 • Cutter Nissan of Maui - Kahului 877-9009
Kauai Nissan - Lihue 245-6731 • Kamaaina Nissan - Hilo 935-3741 • Kona Auto Center - Kona 329-4408

Learning to Implement the Medical Home in Communities

Calvin C.J. Sia MD*, Louise Iwaishi MD**, Sharon Taba MEd***, Kristen Darling BSEd****

Abstract

Practicing the Medical Home within communities is prefaced by university training through pediatric residency programs. Through collaboration experiences, future and practicing pediatricians can learn skills to form effective interprofessional relationships, thereby supporting families and children. Seeing parents as enabled partners and creating interdependent relationships with community members and professionals , enhances the medical home's broad base of support for families.

" A medical home is not a building, house or hospital, but rather an approach to providing health care services in a high-quality, cost-effective manner. Pediatricians and parents act as partners in a medical home to... access all the medical and non-medical services needed to help children and their families achieve their maximum potential."[1]

As we approach the 21st century, children are increasingly being affected by what pediatrics calls the "new morbidity".[2] The new morbidity refers to the developmental and behavioral problems which pediatricians are seeing exhibited in their patients within the last two decades.[3] As a tragic example of the new morbidity, the Colorado school shooting raises immediate questions as to the role of the family and the pediatricians in communities. Increasing social and behavioral problems—e.g.,. AIDS, child abuse and neglect, substance abuse, teen sexuality and school failure—plague our communities.

*Past President, Hawaii Medical Association: American Academy of Pediatrics, Hawaii Chapter; Pediatrician, retired from 38 years of private practice in Honolulu.

**Medical Director of Ambulatory Pediatrics Division and Associate Professor of Pediatrics Division and Associate Professor of Pediatrics, John A. Burns School of Medicine University of Hawaii at Manoa, Kapiolani Medical Center for Women and Children, Vice President, American Academy of Pediatrics, Hawaii Chapter.

***Project Director, Health and Education Collaboration Project and Malama Pono Project, of the Hawaii Medical Association.

****Training Coordinator, Health and Education Collaboration Project of the Hawaii Medical Association.

Correspondence to:
Sharon Taba, Project Director
Health and Education Collaboration Project
Hawaii Medical Association
1360 S. Beretania Street 2nd Floor
Honolulu, HI 96814
(808) 536-7702 fax (808) 528-2376
e-mail: s_taba@aloha.net

Research indicates that parents and children today are at higher risk for negative outcomes in both physical and social-emotional health arenas. In *Health Trends in Hawaii,*[4] the data show increases in the number of incidences for abuse and neglect for younger children (birth to 5). It also notes that low birthweight, associated with smoking and drug use during pregnancy, often leads to poor development. Unintentional injury was the highest cause of deaths for four to five year olds. Childhood asthma continues to be the most prevalent condition occurring in child health. The primary care pediatrician is often the central point between the family and the larger community. How then do pediatricians advocate and contend with the contemporary challenges of practice in communities?

National and Local Movements

Perhaps pediatricians can be assured that they are not going it alone. These new challenges are being addressed at the federal, state and local levels. In 1987, U.S. Surgeon General, C. Everett Koop, M.D., ScD. called for a national agenda for children and their families, emphasizing commitment to family-centered, community-based, coordinated care. Historically, in 1986 the Hawaii Medical Association (HMA) led the first pilot of the medical home with primary care pediatricians, under the leadership of Calvin C.J. Sia, MD. The medical home has since been recognized nationally by the American Academy of Pediatrics (AAP) and the federal Maternal and Child Health Bureau (MCHB). Over ten years later, MCHB has expanded its federal commitment to promoting medical home and integrated services in University education and training programs. HMA received one of only three federal demonstration grants funded to promote family-centered care and interprofessional collaboration among students in medicine, social work and education through University programs. The three grant programs were HMA's Health and Education Collaboration Project (HEC), Partnerships for Change from the University of Vermont and the Higher Education Curricula for Integrated Service Providers from Western Oregon State University.

Families, too, have organized nationally. Core support for families across the country, as well as parent-professional collaboration, have been provided through national organizations such as Family Voices,[5] a grassroots network of families and friends speaking on behalf of children with special health care needs. Josie Woll is one of the national founders of Family Voices. She lives in Hawaii and supports their mission both nationally and locally.

Communities have become the focus of a national effort to strengthen families. The Carnegie Corporation of New York alerted the nation of the "quiet crisis"[6] particularly for those families with children birth to three. The report made four recommendations: 1) Promote responsible parenthood, 2) Guarantee quality child care

choices, 3) Ensure good health and protection and 4) Mobilize communities to support young children and their families. The fourth recommendation highlighted infusing community building strategies as a way to strengthen the health and well-being of families and communities. Carnegie, committed to this effort, funded promising states (10) and cities (6) to work with government and communities. Hawaii was selected and is working in three communities, Koolauloa, Ewa and Hilo/Puna, through the HMA and the Good Beginnings Alliance (GBA), a statewide, non-profit early childhood coordinating mechanism and community-based organization. For the past year, HMA and GBA in collaboration, have worked with the Hawaii State government to adopt the shared outcome that all children are healthy, safe and ready to succeed in school.

Under the newly created Community Pediatrics Division , the American Academy of Pediatrics (AAP) has adopted a 1999 policy statement highlighting that "the role of the pediatrician is to promote the health and well-being of *all* children in the communities they serve." Pediatricians must have a perspective that enlarges [their] focus, recognizes the family within the larger community, enables a practice and public health synergy, and commits to using community-based services in collaborations with significant key members involved in the child's care.[7] The AAP promotes such programs as Community Access to Child Health (CATCH), which offers funding to pediatricians who are willing to work in their communities. The Hawaii Chapter AAP was recently awarded funds to support collaboration between the community pediatricians, pediatric residents and child care centers.

Cross-Cutting University Collaborative Education

Pediatric residency programs across the country are meeting the new challenges to prepare future pediatricians to work in communities. Recently, the American Council on Graduate Medical Education (ACGME) Residency Review Committee recommended, in it's program requirements, increasing time spent in Ambulatory Pediatric Training to as much as 50%, including time spent in Community Pediatrics.[8]

Through the HMA's HEC Project, the University of Hawaii Manoa (UHM) John A. Burns School of Medicine (JABSOM) Pediatric Residency Program, has achieved a major accomplishment in learning to implement the medical home in communities. Over four years, 46 medical residents field tested a collaborative curriculum as they rotated into the training and all program sites, Healthy and Ready to Learn Center (HRTL) in Ewa[9] was formed as a result of a partnership with the Consuelo Zobel Alger Foundation, Child and Family Service, Kapiolani Medical Center for Women and Children and the HMA. Staffed by a team of professionals—a nurse practitioner, social worker and early childhood educator, HRTL provided prenatal and postpartum care, routine well childcare, child development information, parent-child activities, supportive counseling and referral services. Both pediatric and ob-gyn faculty rotated residents into HRTL to work with staff and families. In its fourth year, two new community sites — Parents and Children Together (PACT)in Kalihi-Palama and Waipahu Elementary School/ Head Start, an early childhood, special education collaboration — agreed to work with the University and HEC to host a rotation for an interdisciplinary student team, comprised of a pediatric resident and social work and education graduate students.

Prompted by the critical thinking processes of the project, the HEC Project team evaluated their traditional roles. UHM School of Social Work faculty Ron Matayoshi adapted existing pediatric resident training for use with the "Ho'opili" team of students during their practicum at PACT. Working with the HEC faculty team, Louise Iwaishi, MD, Director of Ambulatory Pediatrics, instituted an innovative community health rotation.[10] Her openness to the other disciplines, a win-win attitude and a "just do it" style enriched the development of the new rotation. As a sustaining outcome of this project, the community health rotation incorporated interactive techniques drawn from the other disciplines. The residents participate in home visiting and journal writing, as influenced by the school of social work, develop portfolios, as modeled by the college of education, and experience guided learning, a school of medicine component. Dr. Iwaishi has also demonstrated how partnerships with community enriches resident education. As Haggerty points out:

> The university possesses some but not all of the knowledge, skills and manpower. Partnership with other institutions—hospitals, health departments social and educational services, businesses, and community foundations—and with private practitioners as well as local citizens groups is necessary.[11]

The HEC faculty team supported this community partnership by securing a commitment from their department Deans — College of Education, Schools of Medicine, Social Work, and Nursing, and the College of Tropical Agriculture and Family Resources — to promote the concept of interprofessional collaboration. The Deans also provided representation at the February 1999 "University and Community-Based Partnerships in Early Childhood" conference.[12] Leaders from the community, philanthropic, medical, educational and human service sectors met for a one-day conference surrounding the needs of communities and families of children with special needs, and promoting partnerships like those so successfully demonstrated in Dr. Iwaishi's Community Health Rotation.

Many lessons learned during these four years, through team development, training and evaluation,[13,14,15,16] point out the need to build on interpersonal capacities, and to learn collaborative skills critical to creating more effective partnerships with diverse families. The most important lessons highlighted the need for increased capacities in areas such as building trusting relationships, fostering commitment, and negotiating. These skills are key to sustaining the relationships. The greatest community challenge is finding community-based staff as competent role models for family-centered interprofessional collaboration. Many institutional barriers exist that keep students in discipline-specific settings, i.e., hospitals for physicians, classrooms for teachers. This is understandable. Physicians must learn the practice of medicine and teachers must learn to teach. However, if new ways of working with families and communities are to be developed, the format for educating the new practitioner must change. Resistance to change is a common phenomenon. Change disrupts the status quo and may cause disequilibrium. Yet the University faculty and the community program site, PACT, were willing to meet the challenge, experience the stress and imbalance of change, and still continue the collaboration. All are

enthusiastically seeking resources to sustain the effort. They have demonstrated that a strong commitment to community partnership is needed to break the "hidden ceiling on scale"[17] or risk succumbing to the towering bureaucracy that allows little leverage to University "rock climbers".

Family-Centered Interprofessional Collaboration

A Two-Module Pediatric Resident Curriculum

Pediatric resident training was based on the seven principles of family-centered interprofessional collaboration. (see Table 1) The project produced a training manual[18] with two modules, containing activities designed to promote the attitudes, skills and knowledge required to provide services that empower families and encourage collaboration among professionals. The two modules are: Part 1: Family-Centered Care and Part II: Interprofessional Collaboration. Each part is separated into four sections.

In Part I, Section I, elements of family-centered care are introduced and scenarios of relevant family issues, which impact pediatric care, are presented. Section II explores working with families from different cultures defined by race, religion, ethnicity, and socioeconomic status, and suggests strategies for becoming culturally competent. Section III explores the definition of Children with Special health care needs (CSHCN) and the special health, educational and social needs of children who are biologically or environmentally at-risk for developmental delays. Section IV suggests guidelines for effective communication, including breaking diagnostic news and interviewing families regarding psychosocial problems.

In Part II: Interprofessional Collaboration, Sections I and II look at the need for interprofessional collaboration by addressing the multiple risk factors affecting children. These sections consider the disparate philosophies of the medical home, nurse practitioners, early childhood educators and social worker. Sections III and IV attempt to integrate disparate roles by creating opportunities for participants to understand their communication styles, which may help or hinder their effectiveness.

Table 1. – Principles of Family-Centered Interprofessional Collaboration

- Promotes a relationship in which family members and professionals work together to ensure interagency coordination to provide improved services for the child and family.
- Recognizes and respects the knowledge, skills, and experience that families and professionals from all disciplines bring to the relationship.
- Acknowledges that the development of trust is an integral part of the collaborative relationship.
- Facilitates open communication so that families and professionals feel free to express themselves.
- Creates an atmosphere in which the cultural traditions, values, and diversity of families and professionals are acknowledged and honored.
- Recognizes that negotiation is essential in a collaborative relationship.
  Brings to collaborative relationships the mutual commitment of families, profession als, and communities to meet the needs of children and their families through a shared vision of how things could be different and better.

Evaluation

The evaluation of this training incorporated a formative evaluation process in the first three years and outcome evaluation in the fourth year.[19] Anne K. Duggan, ScD of the Johns Hopkins University performed the evaluation by collecting data from project documents, conducting in-person semi-structured interviews and observing training activities. The outcome evaluation included interviews of the social work and education graduate students and a self-administered structured questionnaire completed by the pediatric residents of their perceived competence and interest.

Dr. Duggan concluded the following in the formative evaluation:

1) Because the underlying philosophy of interprofessional collaboration is innovative and difficult to explain in the abstract, it is extraordinarily difficult to develop a training program and service program in tandem.
2) Program development requires buy-in from all collaborating agencies.
3) Training program success depends heavily on individuals.
4) Varying degrees of faculty buy-in compromise program impact. It can take several years to elicit active participation of faculty across professions.
5) Scheduling constraints that limit student exposure to the training program compel faculty to find imaginative ways to make the most effective use of available time.

The Outcome Evaluation revealed that the residents (12) who completed the questionnaire rated their competence in community pediatrics as high. Dr. Duggan reported:

> "Ten rated their interest in community pediatrics as high, five with a score of 5 and five with a score of 4. The two residents who rated their interest as low were among those with lower perceived competence scores. Residents rated themselves most highly in communication (Item 6, ability to communicate and establish rapport and Item 8, the ability to communicate with family and others to engage in decision making). They rated themselves lowest in the areas of coordination (Item 9, ability to coordinate the family and professionals to ensure improved services and consultation, and Item 5, being a consultant to a non-health system)."

The outcome evaluation tool, modified from Bradley and colleagues,[20] is presented in Table 2.

Implications for the New Primary Care Pediatrician

The concept of *medical home* requires demonstrated competence in seven major areas. As excerpted from AAP policy statement:

> The American Academy of Pediatrics believes that the medical care of infants, children and adolescents ideally should be *accessible, continuous, comprehensive, family centered, culturally competent, coordinated and compassionate*. It should be delivered or directed by well-trained physicians who are able to manage or facilitate essentially all aspects of pediatric care. The physician should be known to the child and family and should be able to develop a relationship of mutual responsibility and trust with them.[21]

What does this mean for the new primary care practitioner? The call for community engagement and new practices with families and other professionals suggests four practice strategies.

Respect the Family's Story. In the context of family-centered care, a critical question, again, is learning "What is the family's

Table 2. – Community Pediatrics Rotation
Pediatric Resident Self-Evaluation

Name_____ Today's Date_____
Month of Rotation_____*
*In_____(month/year) you completed a rotation at _____.
In evaluating this rotation we would be grateful for your impressions and self evaluation.

RANK YOUR COMPETENCY IN THE FOLLOWING AREAS:
Please circle the number 5 to 1 which best represents your competency with 5 being the highest rank and 1 being the lowest.

1. **Clinical Judgment**: How well could you integrate scientific data, clinical finding, family factors, cultural considerations, social milieu and community resources in making diagnoses and intervention plans for individuals being seen in community (non-clinical) settings?
5 4 3 2 1

2. **Use of Community Resources**: If you were practicing in a setting without social services or other services linking you to community resources, how would you rate your ability to access and utilize community resources that provide effective, age-appropriate, language-specific, and culturally competent assistance that match the needs of underserved patients/families?
5 4 3 2 1

3. **Provision of Health Education**: How would you rate your ability to provide groups of children/adolescents/families with age appropriate, understandable health information and assistance with health-related decision-making and skill building?
5 4 3 2 1

4. **Knowledge Related to Physician's Role in the Community**: How would you rate your ability to differentiate roles for physicians in the community (primary care provider, advocate, and consultant to child-serving agencies)?
5 4 3 2 1

5. **Being a Consultant to a Child-Serving, Non-Health System**: How would you rate your ability to serve as a consultant or representative for a school system, day care facility, or other child-serving agency in the community?
5 4 3 2 1

6. **Relationships with Non-Physician Collaborators**: How would you rate your ability to communicate and establish rapport with non-physicians who provide services to children and their families in schools, community agencies and social services?
5 4 3 2 1

7. How would you rate your ability to convey your recognition of the knowledge, skills, experience, culture and values that families and non-medical professionals bring to the physician/family professional partnership?
5 4 3 2 1

8. How well can you communicate (i.e. openness, trust and respect) with the family and professionals to engage in a decision-making process for at least one improved child health outcome?
5 4 3 2 1

9. How would you rate your ability to coordinate the family and professionals you work with to ensure improved services for your patient?
5 4 3 2 1

10. **Overall Skill**: Please rate the extent to which you now have the skills you need to conduct a community-oriented practice.
5 4 3 2 1

11. **Overall Interest**: Please rate your overall interest in being active in the community as part of your pediatric practice.
very interested.....moderately.....not at all
5 4 3 2 1

story?" Successful implementation of the medical home relies on the pediatrician's skill in learning about the family's unique background and experiences. Family-centered care assumes that "the...role of the family as [care] manager is recognized and respected...parents become experts in their own child, and possess insights that providers of health care lack." Beyond acknowledging the family's role as the child's main caregiver, physicians must recognize the broader social and economic context surrounding the family's life. The medical home relationship draws families to share their story through simple questions from the physician such as "Have there been any major changes in your family since your last visit?". Inquiring about the family's cultural health practices (taking herbs or seeing a traditional healer) may indicate the extent to which the family is willing to follow through with medical treatment.

Recognize the importance of community: Families' decisions regarding health care are largely influenced by their social and institutional experiences living in a community. Though the primary physician provides service to individual patients, they must know how both they themselves *and* the family influence, and are influenced by, the entities comprising the greater community, from an individual member — a neighbor or colleague — to larger health, human service, business, educational, and religious institutions.

Palfrey acknowledges that "the root causes of many primary and secondary health problems rest squarely within the community."[22] Based on a community's strength-based assessment, the physician's aim is to reduce geographical and financial access barriers to child health and to provide medical homes for all children. By asking questions about financial assistance for health care, resource and referrals for services and needs for food and transportation, pediatricians will learn the impact of the social situation on the child's health . The pediatrician should also recommend local resources, such as parent-child groups, that will help the family maintain ties with nearby social or cultural organizations that support family wellness.[23]

Collaborate as the child's medical home: Collaboration with other professionals is a vehicle for moving from the traditional deficit model of care to a comprehensive and preventative one. As multiple forms of care and services are provided in locations other than physician's offices, one role of the pediatrician is reaching out to or being contacted by others involved in the community. The family support network may, for example, include the Healthy Start worker, Public Health Nurse, the Head Start teacher or the therapist. This may be accomplished via telecommunication, e.g. phone, e-mail, fax, or video conferencing, with medical specialists, child care providers, care coordinators and social work case managers. At a minimum, "the [pediatrician] becomes the repository for the database on the child's growth and development, strengths and weaknesses, and intervening experiences."[24] Developed to its full potential, the medical home provider considers themselves a partner on an interdisciplinary team, attuned to the comprehensive array of services provided to the child and family.

Advocate for quality health care: One of the most critical "hats" the pediatrician can wear is that of the advocate. Professional expertise, reinforced with direct experience in the field, provide a secure platform on which to voice recommendations or support family-centered systems and policies. Advocacy is demonstrated in many forms. The pediatrician can generate or write, fax or present

testimony on legislation. They can provide regular communication clarifying the child's health condition to the social worker for Child Protective Service involved child and family. The pediatrician can advise managed care plans to promote children specialists that truly meet the needs of their patients. Visibility at community health or education fairs, also serves as advocacy. In any form, the role of the pediatrician as an advocate cannot be overstated.

Conclusion

By practicing the Medical Home within communities, the primary care pediatrician acknowledges the family's principal role in using appropriate medical and non-medical resources and supports. Equally through collaboration, primary care pediatricians, no longer alone, can learn skills to form effective interprofessional relationships, thereby effectively coordinating services for families and children. By seeing parents as enabled partners and by creating interdependent relationships with community professionals and community members, the primary care pediatrician strengthens the medical home's comprehensive support for families and children in their home and communities.

References

1. *What's a Medical Home?* Medical Home Program for Children with Special Needs: American Academy of Pediatrics. [On-line] Available FTP: Hostname: aap.org Directory: advocacy/medhome File: aap.org/advocacy/mhfacts.htm
2. American Academy of Pediatrics, Committee on Psychosocial Aspects of Child and Family Health. The Pediatrician and the "New Morbidity." *Pediatrics.* 1993:92:731-33.
3. Rushton FE. *Family Support in Community Pediatrics: Confronting New Challenges.* Praeger Publishers, 1998.
4. *Health Trends in Hawaii: A Profile of the Health Care System* Fourth edition. The HMSA Foundation: Honolulu, Hawaii. 1999.
5. Family Voices. P.O. Box 769. Algodones, NM 87001. [On-line] Available FTP: Hostename: familyvoices.org
6. Carnegie Task Force on Meeting the Needs of Young Children. *Starting Points: Meeting the Needs of our Youngest Children*, Abridged Version. Carnegie Corporation of New York, August 1994.
7. American Academy of Pediatrics Committee on Community Health Services. The Pediatrician's Role in Community Pediatrics. *Pediatrics.* 1999:103:6:1304-1305.
8. American Council on Graduate Medical Education (ACGME) Residency Review Committee Report. [On-line] Available FTP: Hostname: acgme.org Directory: rrc/residenc.htm File: acgme.org/rrc/peds/peds.htm
9. Sia, CJ. The Role of the Medical Home and Interprofessional Collaboration. *Hawaii Medical Journal.* April 1995:54:549-51.
10. Shope, T., Bradley, B.J., Taras, H.L. A Block Rotation in Community Pediatrics. *Pediatrics.* 1999:104:143-47.
11. Haggerty, RJ. Community Pediatrics: Past and Present. *Pediatr Ann.* 1994:23:663.
12. Taba, S. Darling, K. "Talk Story: A Beginning Dialog" Conference Summary. Health and Education Collaboration Project, April 1999.
13. Hawaii Medical Association, Health and Education Collaboration Project. ca.1995. *Building Bridges: Lessons Learned in Family-Centered Interprofessional Collaboration—Year One.* Honolulu, HI: Health and Education Project, Hawaii Medical Association.
14. Hawaii Medical Association, Health and Education Collaboration Project. ca.1996. *Building Bridges: Lessons Learned in Family-Centered Interprofessional Collaboration—Year Two.* Honolulu, HI: Health and Education Collaboration Project, Hawaii Medical Association.
15. Hawaii Medical Association, Health and Education Collaboration Project. ca.1997. *Building Bridges: Lessons Learned in Family-Centered Interprofessional Collaboration—Year Three.* Honolulu, HI: Health and Education Collaboration Project, Hawaii Medical Association.
16. Hawaii Medical Association, Health and Education Collaboration Project. 1998 *Bridging Out: Lessons Learned in Family-Centered Interprofessional Collaboration—Year Four.* Honolulu, HI: Health and Education Collaboration Project, Hawaii Medical Association.
17. Schorr, L. *Common Purpose.* Anchor Books, 1997.
18. Iwaishi, L., Taba, S., Howard-Jones, A. Brockman, D., and Ambrose, A. 1998. *Training on Family-Centered Interprofessional Collaboration: A Manual for Pediatric Residents.* Honolulu, HI: Health and Education Collaboration Project, Hawaii Medical Association.
19. DugganScD, AK. *Evaluation of the Health and Education Collaboration Project.* Johns Hopkins University. Sept. 14, 1998.
20. Shope, T., Bradley, B.J., Taras, H.L. A Block Rotation in Community Pediatrics. *Pediatrics.* 1999:104:143-47.
21. American Academy of Pediatrics. The Medical Home. *Pediatrics.* 1992:90:5:774.
22. Palfrey, JS. *Community child health An action plan for Today.* Connecticut: Praeger Publishers. 1994:218.
23. Green, M. ed. *Bright Futures: Guidelines for Health Supervision of Infants, Children and Adolescents.* Arlington, VA: National Center for Education in Maternal and Child Health. 1994:64.
24. Palfrey, JS. *Community Child Health An Action Plan for Today.* Connecticut: Praeger Publishers. 1994:54.



Malama Pono

The Medical Home & Integrated Services Project

Visit our website...
http://www.medicalhomehi.com

Featuring: bulletin board discussions on the 7 elements of a Medical Home...

And coming soon: IFSP On-line
Contact us to help develop this ground breaking communication tool to assist you in coordinating care for your patients.

e-mail Sharon Taba at: s_taba@aloha.net
e-mail Kristen Darling at: kristen@medicalhomehi.com

This Health and Education Collaboration Project activity is supported in part by project #4 H02 MC 00009-04 S2 from the Maternal and Child Health Bureau (Title V, Social Security Act), Health Resources and Services Administration, Department of Health and Human Services.

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



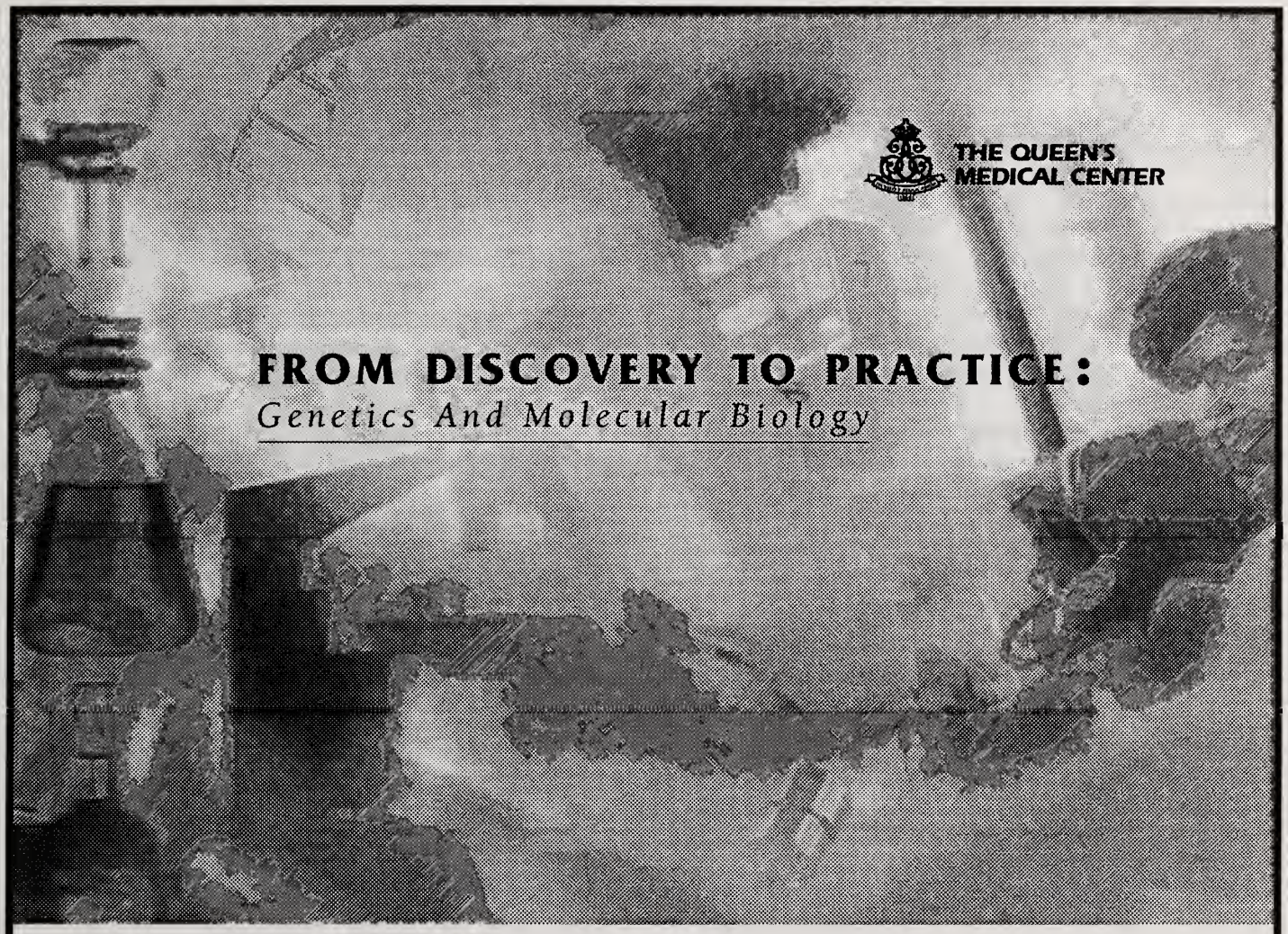
- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA



THE QUEEN'S MEDICAL CENTER

FROM DISCOVERY TO PRACTICE:

Genetics And Molecular Biology



HONOLULU, HAWAII

The Second Annual Queen's Conference

Monday, Tuesday, Wednesday
February 28,29, March 1, 2000
Hilton Hawaiian Village, Honolulu

- Conference Chair
  R.Michael Blaese, MD, PhD
  Clinical Gene Therapy, NIH (retired)
  President Chief Scientific Officer, Kimeragen Pharmaceuticals

- Topics include discoveries and applications in cardiology, oncology, and neurosciences as well as clinical implications of the Human Genome Project, ethical issues, and gene therapy. Confirmed speakers are from some of the most prestigious research and clinical centers across the United States.

If you wish to be mailed a brochure,
call **(808) 537-7009**
or visit our web site at www.d2p.queens.org

Sponsored by The Queen's Medical Center, Honolulu

143rd HMA Annual Meeting

October 1999, Hilton Waikoloa, Big Island

House of Delegates

Attendees

Speaker of the House: Dr. H.K.W. Chinn
Vice-Speaker of the House: Dr. W. Young

Officers:
Dr. P. Chinn, President
Dr. J. Lumeng, President-elect
Dr. L. Howard, Immediate Past President
Dr. C. Kelley, Treasurer
Dr. P. Hellreich, Secretary

Component Society Presidents:
Dr. C. Akau - Honolulu
Dr. P. Kim for Dr. P. Aiu - Kauai
Dr. A. Bairos - W. Hawaii
Dr. D. Camacho - Hawaii
Dr. J. Weisul for Dr. M. Savona - Maui.

Councilors:
Drs. A. Arensdorf, W. McKenzie, S. Saiki, M. Shirasu

Resident Physician Section:
Dr. K. Reilly

Delegates:
Drs. E. Adams, T. Au, E. Bade, J. Budde, L. Buenconsejo, K. Durante, C. Goto, T. Grollman, K. Hara, M. Hefley, F. Holslchuh, E. Magnier, G. McKenna, A. Meyers, E. Montell, G. Pang, D. Parsa, G. Powell, R. Quintana, J. Sarubbi, A. Siu, S. Wallach, C. Wong, S. Yasui.

Alternate Delegates:
Drs. D. Andrew, G. Beardsley, P. Blanchette, E. Cachola, N. Ching, B. Fong, G. Hager, M. Hase, M. Inamasu, B. Issell, I. Rahman, D. Saito, R. Stevens, G. Wergowske.

Past Presidents:
Drs. A. Don, W. Chang, H.Y.H. Chinn, W. Dang, C. Lehman, J. McDonnell, J. Spangler, R. Stodd, N. Winn.

Guests:
Robert Bogin, MD, Chair, AMPAC Board of Directors; Jack Mc Mahon, MD., Corporate Medical Director Mountain Pacific Quality Health Foundation; Dee Dee Nelson, Director Mountain Pacific Quality Health Foundation, Hawaii Office; William Plestad, MD, AMA Trustee.

HMA Staff

J. Won, B. Kendro, J. Asato, P. Kawamoto, J. Kawamoto, D. Shiraishi, N. Yamamoto, D. Chinen, T. Morneau, and A. Rogness - recording secretary.

In Memorium

Colleagues deceased since the 1997 House of Delegates

Marcelino Avecilla, MD	*37 Years*
Stanley Batkin, MD	*35 Years*
Alfred Burden, MD	*60 Years*
C.M. Burgess, MD	*64 Years*
Claude Caver, MD	*47 Years*
Paul Condit, MD	*19 Years*
Thomas Fujiwara, MD	*57 Years*
William H. Goebert, Jr., MD	*22 Years*
Robert Hollison, MD	*17 Years*
Joseph Lau, MD	*59 Years*
Leslie Luke, MD	*58 Years*
Chew Mung Lum, MD	*44 Years*
Thomas Min, MD	*50 Years*
Carl Mirikitani, MD	*53 Years*
Bill Nakama, MD	*9 Years*
Herbert Takaki, MD	*65 Years*
Donovan Ward, MD	*? Years*
William Wilkinson, MD	*? Years*
John Zelko, MD	*35 Years*

Elected Officers for 1999/2000

President-elect: *Philip Hellreich MD*
Treasurer: *Paul DeMare MD*
AMA Delegate: *Calvin Kam MD*
Alternate AMA Delegates: *Frederick C. Holschuh MD, and Stephen J. Wallach MD*
Speaker of the House: *Herbert K.W. Chinn, MD*
Vice-Speaker of the House: *Walter Young, MD*
Honolulu Councilors (8): *Drs. Thomas Au, Arlene Meyers, Calvin Wong, Stanley Saiki, Sharon Lawler, Melvin Inamasu, Lance Kurata, Richard Mitsunaga.*
Kauai Councilor: *Peter Kim MD*
Hawaii Councilor: *Raymond Lee MD*
West Hawaii Councilor: *Blase Leeloy MD*
Maui Councilor: *David Sheetz MD*
Peer Review Committee: *Drs. Richard Lee-Ching, Ronald Peroff, Karen Ratliff, Vivian Ishimaru-Tseng*

Nominating Committee 1999-2000

Kauai - *Patrick Aiu MD*
Maui - *Alfred Arensdorf MD*
Hawaii - *Peter Matsuura MD*
West Hawaii - *Ali Bairos MD*
Honolulu (5) - *Drs. Herbert K.W. Chinn, Philip Hellreich, Philip McNamee, L. Bruce Mills, Neal Winn*
Past Presidents: *Drs. Patricia Chinn, Leonard Howard*

Sports Awards

Golf Tournament Winners:
Low Gross: *Carl Ho MD* (72)
Low Net: *Andrew Don MD* (76)

Tennis Tournament:
Men: 1st: *David Andrew MD*
2nd: *Inam Rahman MD*

Women: 1st: *Diane Nagasaka MD*
2nd: *Bonny Andrew (spouse of D. Andrew MD)*



Gerald McKenna MD
HMA Secretary

Clinical Topics
Highlights of the HMA Scientific Session

Russell T. Stodd MD

MEDICINE FOR THE NEW MILLENNIUM

The outstanding continuing education program for this annual meeting was divided into four sections, basic science, clinical neuroscience, the bionic man: implants and prosthetics, and organ and tissue transplantation.

BASIC SCIENCE UPDATE - Friday, October 29, 1999 -

The first basic science offering featured a detailed discussion of Hypercoagulabile States - What Should Be Done? by Dr. Stacey Honda, pathologist and assistant clinical professor at the John A. Burns School of Medicine. Noting that venous thromboembolism is the 3rd most common cardiovascular disorder, following ischemic heart disease and stroke, she elaborated on the three causes; inherited, acquired and physiologic. Her comprehensive presentation localized primarily around the inherited defects with ethnic variations. The talk was delivered rapidly with multiple detailed slides.

Nadhipuram V. Bhagavan, Ph. D. , Professor and Chairman of the Department of Biochemistry and Biophysics at JABSM, followed with a discussion of Prostate Specific Antigen (PSA) What To Do? Prostate cancer is the leading cancer site in men with 179,000 new cases in 1999. PSA is the best tumor marker thus far, but that very sensitivity creates questions. This glycoprotein serine protease is found in small concentrations in other tissues, both benign and malignant. Noting that 20% of men with prostate cancer have normal PSAs, and that possibly more men die with prostate cancer than from it, Dr. Bhagavan concluded his excellent presentation with a stimulating question and answer session. Interesting and compelling presentation.

A rousing round of applause greeted the next speaker, Ryuzo Yanagimachi, Ph.D., the noted professor, who presented a program about Cloning of a Mouse - What Does This Scientific Breakthrough Mean? Using slides of various animals, mice, sheep, cattle, goat, pig, and even the wooly mammoth, Dr. Yanagimachi discussed questions of public acceptance, and possible uses of cloning. People are very favorable to cloning of animals to benefit our society, but 99% of those polled are against human cloning. His accent was evident, but the presentation was witty, informative, personable and altogether captivating.

FOCUS OF CLINICAL NEUROSCIENCE -

The second session shifted to a focus on clinical neuroscience by Cherylee W.J. Chang, M.D. Director of the Stroke Center at Queen's Medical Center. Using slides and a comprehensive handout, Dr. Chang presented a very good discussion of Stroke as a Brain Attack – What Is Important and Why the Rush? She noted that 3/4 million Americans are hit with stroke each year at a cost of $41 billion. Nationally 85% are ischemic and 15% hemorrhagic, while in Hawaii the ratio is 70/30. The reason for this disparity has not been determined. Dr. Chang emphasized the value of early diagnosis and treatment. It is essential to have a coordinated team approach with prompt 911 response, EMS and hospital personnel ready to provide necessary support, with CT scans, thrombolytics, anti-coagulants, neuroprotectors, and possibly neurointerventional radiologists. With a ready and trained team, we will be able to decrease the morbidity of this disabling condition. This was valuable material, well presented.

Eric M. Oshiro, M.D. Honolulu neurologic surgeon, followed with a paper on Head and SpinalCord Injury in Hawaii - We Can Do Better. He noted the need for prompt support with oxygen and maintenance of blood pressure in patients presenting in coma. High doses of steroids are often needed, and close observation for progressive neurologic deterioration, with signs of intracranial hypertension. Management of acute spinal cord injuries require identification, stabilization, and immobilization with appropriate devices. Therapy with high dose steroids, oxygen and support of blood pressure are again the primary consideration.

The final paper of the morning was a Continuum of Neurological Care in Hawaii, presented by Jill Williams, M.D. Physical Medicine and Rehabilitation of the Rehabilitation Hospital of the Pacific. Focusing on development to fullest potential after stroke or injury, Dr. Williams showed how patients are aided in speech recovery, managing deformities, proper exercise, and learning how to care for themselves. The physician's role is to manage pain, insomnia, spasticity and depression. Occupational therapy can be provided, and family members are educated and instructed in how to assist the patient in recovery and adaptation. Coordinated planning and efforts can result in optimal development and rehabilitation.

THE BIONIC MAN - PROSTHETICS AND IMPLANTS. Saturday, October 30, 1999

The morning session began with a presentation of Joint Implants by Thomas J. Kane III, M.D., Chief, Section of Joint Implant Surgery at JABSM. Describing implants of shoulder, hip and knee, he noted the biologic structure of cartilage and its healing structure fibrocartilage. Research has led to replacement of fibro-cartilage with autologous tissue which can be harvested, grown in a lab and replaced to aid return to normal function. Regarding implants, material may be ceramic, polyethylene, and cobalt chrome, variously resistant to degeneration in time. New synthetics are constantly being studied for bio-tolerance and durability. Some joints can be well replaced such as hip and knee, and the shoulder somewhat less effectively, however the wrist and ankle joint im-

plants are much less successful. The primary indication for joint replacement is pain, and secondarily, mobility. At present, about 400,000 hip replacements are performed in America each year, with longevity of about 15 years.

Cataract Surgery and Intraocular Lens Implantation by Carlos A. Omphroy, M.D., Assistant Clinical Professor Surgery at JABSM centered around a careful history and evolution of cataract surgery with good slide illustrations. The development of intraocular lens implantation began almost 50 years ago by Dr. Harold Ridley in Great Britain. Subsequently, various implants were described and evolved, with variable degrees of success, so that acceptance awaited an implant that could be well tolerated. Today, cataract surgery is the most common operation performed with over two million surgeries each year. The operation is a purely ambulatory procedure with a high degree of successful outcome, and great savings in patient morbidity, and vast reduction in expenditures.

Clyde H. Ishii, M.D., Clinical Associate Professor of Surgery, John A. Burns School of Medicine, presented a paper on Implants in Plastic Surgery. With an excellent printed outline, he noted the history of plastic surgery, and that the word comes from the Greek, plastikos - "to mold." Biocompatibility and implant toxicity are matters of great importance, and the surgeon's skill and location of implant are factors. Systemic disease, hypersensitivity, and carcinogenicity are rarely associated with current polymeric and metal implants. Primary causes of failure are infection, extrusion, pain, loosening, displacement, fracture, implant degradation and inflammation. All synthetic polymers stimulate fibrous encapsulation. Implants have proved successful for the nose, cheek, chin, breasts, joints, teeth, and bone. The future will yield implants of longer duration and bioresorbable polymers where tissue will gradually replace the artificial one.

Edward N. Shen, M.D. Professor and Chief of Cardiology at the JABSM followed with a paper on Cardiac Implants and Prosthetics. The latest stents can open vessels and save a lot of surgery in cardiovascular disease, even for large vessel stenosis. Hospitalizations can be reduced from seven to two days. Prosthetic heart valves were discussed, as were pacemakers and defibrillators. Minification of devices has rendered them much more versatile for heart failure and other cardiac myopathies. The artificial heart is still on the horizon. No handouts were included.

A marvelous presentation of the Bionic Man: Implants and Prosthetics of cochlear implants for severely deaf patients was given by Kazuo Teruya, M.D. Associate Clinical Professor of Surgery at JABSM. With appropriate illustrations, the procedure was described to show the cochlear implant, an electronic device not a hearing aid, surgically implanted in the cochlea to stimulate the nerve endings directly. Performance varies, and rehabilitation in auditory and speech therapy is extremely important. Dr. Teruya presented two patients who described their success with the cochlear implant in a dramatic and refreshing manner. An excellent program.

The session concluded with the Bionic Lower Limb, by Gary A. Okamoto, M.D. Associate Clinical Professor of Medicine at JABSM. The oldest prosthesis was found in a tomb in Capua, Italy dating to 300 B.C. and was made of bronze and iron with a wooden core. Stimulated by wars and other trauma, serious research and development accelerated with World War II. Over the last three decades an explosive growth in prosthetics has occurred. Dr. Okamoto's presentation included a comprehensive handout and a video and slides. Various devices for amputees were illustrated, and the subject was well covered with illustrations of walking, running, and athletic competition.

ORGAN AND TISSUE TRANSPLANTATION - Sunday, October 31, 1999.

The final educational session began with a presentation of Organ Retrieval: Hawaii's Experience and How to Increase Donations by Robyn Kaufman, Executive Director, Organ Donor Center of Hawaii. Presently, 225 patients are awaiting organ transplant in Hawaii. Donors are difficult to get in Hawaii due to relatively small numbers and problems with gaining consent. When death of a potential donor is imminent, the organ donor center should be contacted. Brain death needs to be determined and consent of the family obtained. The time of approach to the family of the donor must be considered when asking for consent to donate organs, irrespective of the dying person's wishes.

Fred Safi, Eye Bank Director for the Hawaii Lions Eye Bank and Makana Foundation, gave a paper, Cornea and Eye Retrieval summarizing retrieval of eyes for corneal transplant and scleral banking. He noted that the first corneal transplant was attempted in 1905, and is now a common and successful procedure. Tissue typing is not necessary, and rejection is uncommon. Whenever possible the tissue should be harvested in four to six hours, and can be maintained in preservative solution for up to five days.

Renal Transplantation was presented by Whitney M. L. Limm, M.D., Associate Professor of Surgery JABSM. The first successful kidney transplants occurred in the 1960s, and are now done routinely. In 1998, twelve thousand renal transplants were performed in the United States. The failure rate is between 10 and 15% in the first year, due to death or tissue rejection. After one year the problem is chronic rejection or death. Steroids and immunosuppression drugs are used, and the future offers more precise DNA testing and better drugs to prevent rejection.

Liver Transplantation for end stage liver disease was discussed by Linda L. Wong, M.D., Assistant Clinical Professor at JABSM. The procedure, once considered impossible, has become a standard operation at transplant centers. The first year survival is 79%, three year 67% and five year 62%. The primary reasons for liver failure are hepatitis B, C, or alcoholic cirrhosis. There are more patients than donor livers, so the question arises who gets the liver? Patients are rated from one to four according to severity of illness, but that rationality is being challenged. Arguably, the sickest patients often have the worst prognosis, therefore perhaps the liver should go to the healthier patient with the best chance of survival. Also, factors such as politics, wealth, and fame, such as the Mickey Mantle episode can enter in, but an allocation scheme is used whenever possible.

Carlos Moreno-Cabral, M.D., Assistant Professor of Surgery at JABSM gave an excellent paper on Cardiac Transplantation. Christiaan Barnard in South Africa performed the first cardiac transplant in 1967. Dr. Norman Shumway at Stanford pioneered the procedure in America in 1968, and now there are 304 transplant programs and 48,451 heart operations have been performed. Overall the survival rate at one year is 79%, and the median survival is 8.8 years. The program was initiated at St. Francis Hospital in March 1987, and as of September 1999, 32 transplants have been done with

three hospitals deaths. The approximate cost is $150,000, and the longest survivor is beyond 10 years. Donor availability remains the main limiting factor. Dr. Cabral presented current research in ventricular assist devices, and outlined some future expectations in cardiac devices.

Controversies in Organ Donation and Transplantation was the topic for Alan H.S. Cheung, M.D., Professor of Surgery at JABSM. New technology has brought controversies as the question of organ replacement has opened many areas of challenge. When should a transplant be done? Who should receive the tissue? What about using the tissue of anencephalic infants, prisoners, and what about the use of xenotransplants from animals? Now the internet offers the possibility of buying donor organs. As this field expands how can the escalating costs of harvesting donor organs, performing surgery and immunosuppresive drugs be funded? Many questions and some conflicts attend this burgeoning area of medical technology, and structure and appropriate mechanisms need to be discussed and planned.

The program drew to a close with a paper on Bone Marrow Transplantation Update by Kaye Kawahara, M.D. Director of Bone Marrow Transplantation at St. Francis Medical Center. Sources of stem cells for transplant are bone marrow, peripheral blood, and cord blood. The procedure is reserved for those patient's suffering with diseases that have little chance for survival such as some of the leukemias, lymphomas and advanced breast cancer. The procedure has been challenged by reports of recent research which indicate that bone marrow transplant has proved no more effective than standard cancer therapy. Part of the difficulty is that there is no way to run a randomized study. Future directions include gene therapy, graft manipulation and stem cell selection.



Scientific Session at the 1999 HMA Annual Meeting.

























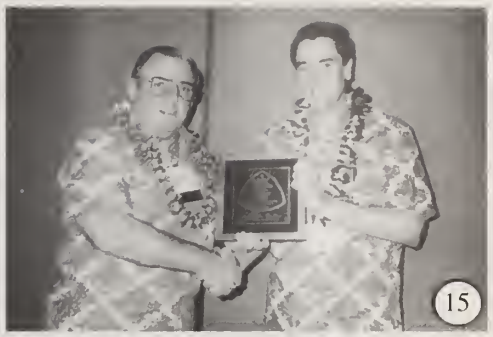
Scenes from the 1999 HMA Meeting

Hilton Waikoloa, October 1999

1) 1999 HMA President Pat Chinn and 1999 Physician-of-the-Year John T. McDonnell.
2) Dr. John McDonnell (center) with his wife Lillian and son Matt as well as his mother and elementary school teacher and other family members from the east-coast who secretly flew to Hawaii for presentation of the 1999 Physician of the Year award to McDonnell.
3) Dr. McDonnell, costumed as Chewbacco, does battle with a cigarette to get to Queen Zyban who hold his award.
4) Dr. James Lumeng receives the oath of office from Dr. Pat Chinn to begin his second term as HMA President, first in 1989 and again for Year 2000.
5) Dr. James Lumeng, wife Brenda, and daughters.
6) Moderator for the annual banquet, Dr. Russell T. Stodd, past president and former AMA Delegate.
7) Medical students from the John A. Burns School of Medicine at the annual banquet.
8) Front row: Year 2000 President James Lumeng, 1999 President Pat Chinn, Immediate Past President Len Howard, President-elect Phil Hellreich, 1999 Treasurer Chuck Kelley. Back Row: HMA Past Presidents Russell Stodd, Fred Holschuh, John Spangler, John McDonnell, Herbert Y. H. Chinn, Andrew Don, and William W. L. Dang.















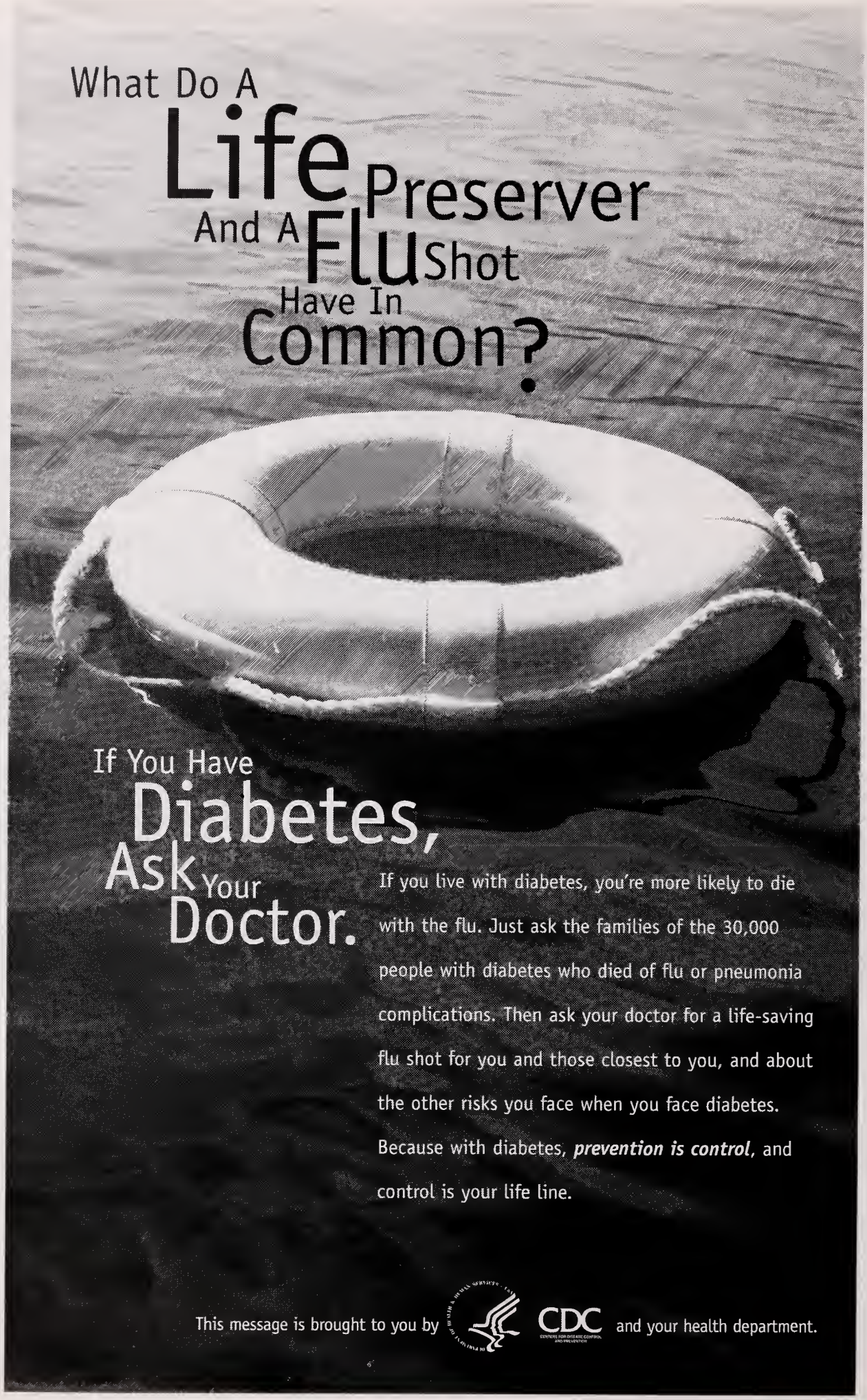








9) Dr. Roger Kimura with Mrs. Carol Lehrnan and Dr. Carl Lehman.
10) Dr. Paul DeMare, elected Treasurer for Year 2000 receives oath of office from 1999 Treasurer Chuck Kelley.
11) Dr. Martha Lou Hefley and her attendant
12) Dr. and Mrs. Herbert Y. H. Chinn, parents of Dr. Pat Chinn.
13) John T. McDonnell, MD, Chairman of HAMPAC presents Outstanding Legislator Award to Rep. Ron Menor.
14) Dr McDonnell presents Outstanding Legislator Award to Rep. Romy Cachola.
15) Robert Bogdin MD, Chair, of the AMPAC Board presents award for increased membership to Dr. John McDonnell.
16-18) Friday nite Halloween party with exhibitors, physicians and their families.
19) Dr. Stuart Pang with children enjoy a moment together.
20) Dr. Roger Kimura at the Halloween party: his mask and clothing and shoes were all on backwards!
21) Mrs. Sibrina Toma, Mrs. Ann Yasui and kids at Friday night ice cream party.
22) Masa and HMA Accounting Department Director Pat Kawamoto who was honored at the annual banquet.
23) Diane Shiraishi, Joella Kawamoto, and Jennie Asato of the HMA staff presenting a workshop on Getting Ready for Halloween for small and adult kids.


What Do A
Life Preserver
And A Flu Shot
Have In
Common?
If You Have
Diabetes,
Ask Your
Doctor.
If you live with diabetes, you're more likely to die with the flu. Just ask the families of the 30,000 people with diabetes who died of flu or pneumonia complications. Then ask your doctor for a life-saving flu shot for you and those closest to you, and about the other risks you face when you face diabetes. Because with diabetes, ***prevention is control***, and control is your life line.
This message is brought to you by
CDC
and your health department.

Mammograms

Not just once, but for a lifetime

The National Cancer Institute has free booklets about breast cancer screening. To order these publications, call NCI's Cancer Information Service at **1-800-4-CANCER** (1-800-422-6237). Persons with TTY equipment, dial 1-800-332-8615.

http://rex.nci.nih.gov

Janssen Pharmaceutica

Is proud to support the Hawaii Medical Journal

World leader in antimycotic research

JANSSEN • PHARMACEUTICA • • RESEARCH FOUNDATION •

Titusville, NJ 08560-0200

®1998 Janssen Pharmaceutica

Aloha Laboratories

...when results counts

A CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

- **Surgical Pathology**
- **Dermatopathology**
- **Cytopathology**
- **Gynecologic Pathology**
- **Frozen Sections**

David M. Amberger, M.D.
Laboratory Director

2036 Hau Street, Honolulu, HI 96819
Phone (808)842-6600
Fax (808)848-0663
ALOHALABS@WORLDNET.ATT.NET

Arleen D. Jouxson, Esq.
Attorney at Law



A.K.A. Arlene Meyers, MD, MPH

- **Wahiawa pediatrician since 1979**
- **Associate Clinical Professor, JABSOM**
- **1998 Roscoe Pound award winner in health care law**
- **President & founder of the Hawaii Coalition For Health**

NEED HELP?

- **with Par. Agreements?**
- **Understanding health care laws?**
- **Resolving disputes with health insurers?**

CALL 621-8806 (Oahu) for more information or for a free initial consultation at your place of business.

302 California Ave., #209, Wahiawa, HI 96786, Ph: 621-8806; Fax: 622-5599

News and Notes Henry N. Yokoyama MD

Precious Memories...

Dear Henry:

As I mentioned to you, Tom Whelan was a very important man in my life and probably had more influence on me than any one person other than my parents. I came under his influence for at least 39 years.

I first met Tom when I was a young Air Force intern at Walter Reed Army Hospital in 1960. I rotated on the general surgery service and Tom was the Assistant Chief of that service. It was a very hard working but delightful experience working with him and learning from him. In 1962 I returned to Walter Reed as a general surgery resident. At this time he was Chief of the service. Perhaps one of the most difficult things I ever had to do was to tell him in 1963 that I wanted to switch from general surgery to urology. He accepted this well and actually informed me that he had tried to do the same thing when he was in training but was not allowed to do it. He facilitated me in every way, many of which I was unaware of until recent years. The switch was complicated by the fact that the Air Force refused to assign me to the urology service at Walter Reed but insisted that I go to another hospital in Texas. When Tom and the Chief of the Urology Service were made aware of this, unbeknownst to me, they approached. The Surgeon General of the Army. Lt. Gen. Leonard Heton, on my behalf and structured an inter-service transfer from the Air Force to Army, along with the appointment to the urology service as a resident.

After completing my residency, in 1966 I was assigned to Tripler Army Medical Center as the Assistant Chief of the Urology Service. At that time Tom was Chief of the Department of Surgery and urology actually fell under his command. I found it to be a privilege and very enlightening to work with him in this new capacity. I was especially elated when he was selected for promotion to Brigadier General and quite proudly attended his promotion ceremony.

I then went on to serve a year in Vietnam and upon return, joined Straub Clinic as a staff urologist. I also became affiliated with the John A. Burns School of Medicine and was granted a clinical academic appointment in the Department of Surgery. As you so well know, Tom was Chairman of this department.

He performed two major surgical procedures on me over the years and was available on numerous occasions to counsel me when I had serious decisions to make. I always found his counsel rewarding and decisive in helping me make the appropriate decision.

He was my friend, teacher and mentor in the pre-civil rights era, when it was probably difficult to support African Americans in what was a somewhat hostile environment.

On the recommendation of Tom and Charlie Judd, I was appointed to the office of Governor from Hawaii to the American College of Surgeons and served in that capacity for six years.

I dearly miss Tom, his pleasant manner, great advice and unconditional support. To me, he was indeed a man for all seasons.

Sincerely yours,
John W. Edwards, Jr., MD

A Xmas Gift...

Dear Dad, 12/23/99

Merry Christmas! This has certainly been an exciting year, more like a rollercoaster ride. It made me realize how vulnerable we are to sudden turn of events that at first seem negative but in the end, become positive. Your CHFs and hospitalizations, for example, brought the fear of losing you into our hearts and souls. Yet, it united our family... working, talking, laughing, crying all together for the first time in years. Such an affirmation of love and what family is all about. You and mom have created together a fascinating dynasty of individuals, all so different in personalities yet identical in their love for our family. The common thread that you weaved in all of us is to reach out and help our neighbor but family comes first. I'm sure the loss of your own father at an early age taught you this. I saw how you cared for Grandma and how lovingly you spoke of her at her funeral... maybe one day you could translate for us what you said that day.

Anyway, you are a hard person to shop for. Two weeks ago there was a TV movie entitled, "Tuesdays with Morrie" that Mark's mom told me to watch. It was a wonderfully made TV special based on an equally wonderful book. I am giving the book to you for Xmas. You have always been a mentor to so many physicians and of course, to your children. I thought you'd like to read of another student/mentor relationship.

I love you dad with all my heart. You have kept me grounded in my values and love of family, and I am eternally grateful. It is a debt that is payable only if I carry out and instill in my own children, the values and love of family that you taught me.

Love,
Joanne

Potpourri...

Four well dressed ladies were having lunch and bragging about their sons...

First lady: "My son went into the clergy and is a priest. When he enters a room, people show respect and address him as "Father."

Second lady: "My boy also became priest. He's now a bishop and when he enters a room, the people address him as "Your Highness."

Third lady: "My son also went into the church and rose to the rank of a cardinal. When he enters a room dressed in his colorful cloak, people bow and say "Your Eminence."

The three ladies looked at the fourth lady to ask about her son. The lady says, "My son didn't go into the clergy. He's 6 feet 2 inches tall, has a beautiful athletic body and became a male stripper. When he enters a room, and takes off his clothes, the women all sigh and say, "My God!!"
As related by Myron Shirasu (Our humorist friend)

Confernce Notes:

"Weight Loss – Current Methods" VP Ken Fujioka, Scripps Clinic Fri AM Conference Kam Aud 7/30/99

General Discussion: We have an obesity epidemic...50% of San Diego residents are overweight...The American Heart Ass'n declares "obesity a modifiable risk factor for CHD"...Obesity definition: "Pt with enough excess fat tissue that they are at risk for increased medical problems"

BMI = $Wtg/Ht^2 = Kg/M^2$ $25 + Kg^2/M$ = Obesity
"Obesity + genetics = loaded gun"
Comorbid Condition + ↑BMI:
No comorbidity (35%)
Comorbidity (65%)
Comorbid Conditions: a) HTN, b) CHD, c) Cancer (Prostate & Colon), d) NIDDM

HTN + Obesity:
a) ↑Cardiac Output, b) Activates Renin-Angiotensin System, c) ↑Na resorption, d) ↑insulin resistance

Drug Rx of Obese Pt with HTN: a) Diuretic, b) ACE, c) CCB

Cost savings with Wtg Reduction:
Diabetics: 7% wtg loss = $104/mos
Hyperlipidemic: 5% wtg loss = $61/mos
Hypertensive: 10% wtg loss = $21/mos

Medical Management of Obesity:
PI: Onset, Hx wtg gain, Previous wtg reduction attempts; Hx of eating disorders (Anorxia, Bulimia, binge eating)

PMH: FH:

PE: Wtg, Ht, BMI; measure waist, hips; examine skin, thyroid, Heart, Lungs, edema

Central Obesity: Women over age 35; Men over 40...

Lab Workup: a) General Chem panel, b) Lipid panel, c. Optional: Thyroid studies; insulin (fasting); 2 hr GTT; CORTISOL

Treatment Options:
Less than 800 calories: Very low calorie diet
800-1200 calories: low calorie diet
1200-1500 calories: Moderate calorie restriction
Treatment Options:
A. Behavorial
1) Behavior Modification (10 wks)
2) Dylan Therapy (Years)
3) Others: Hypnosis

B. Exercise: (A Must) 80-90 min/day
Best treatment option; predominant therapy of individuals who keep wtg off.
Aerobics: 30 min/d

Medicines:

	Delivery Amt			Reuptake Inhibition		
	5HT	NE	RA	5HT	NE	RA
Dexamphetamine		xx	xx		x	x
Phenterene		x				
Fenflurane	xxx			x		
Dexfenflurane	xxx			x		
Sibutramine				xxx	xxx	

Orlistat (Key Pharmacology): Long term - 2-3 yrs (Otherwise wtg is regained)

Xenical 120mg tid + diet; First 2 wks: oil spotting; flatus; fecal urgency; oily BM; ↑defecation; ↓absorption fat-soluble vitamins and Beta carotenes; Pt needs multivitamins

***Sibutramine (Over view): Serotonin and Norepinephrine Reuptake Inhibitor (SNRI) Available 10 and 15mg doses

Type II + Sibutramine: a) Wtg loss 4%, b) HbAlC↓ c) HDL↑; Triglyceride↓
Side effects: Dry mouth, constipation; insomnia, ↑appetite; HA's, BP↑
Interacts c̄ MAOI's; SSRI's; Erythromycin

Potpourri...

Lou had a miserable cold and went to see his doctor who prescribed some pills. They didn't help. On Lou's next visit, the doctor gave him a shot, but that didn't do any good either. On his third visit, the doctor told Lou to go home, take a hot bath, open the window and stand there naked and soaking wet.

"But doc," Lou protested, "I'll get pneumonia!"

"Pneumonia," the doc replied, "I can cure."

Quotable Quotes...

"Nobody belongs to us, except in memory."
John Updike (The Afterlife)

"Without darkness, there are no dreams."
Karla Kuban

"Procastination means you know what you need to do and you don't do it. If you don't know what to do, you aren't procastinating...You are thinking."
Lynn Lively (Readers Digest Dec)

A newly wed couple was planning to visit Hawaii. "It's pronounced Havaii," said the husband.

"No, it's Hawaii," the wife insisted. They argued until they deplaned in Oahu. The husband approached a man at the gate and asked, "Can you settle an argument for us? Is this Hawaii or Havaii?"

"This is Havaii," the man replied...

"Ha!" said the husband to the wife, "See? Didn't I tell you I'm always right?" The husband turned back to the man, shook his hand and said, "Thank you."

"You're velcome."

Conference Notes...

"New Concepts : Carcinoid Syndrome, Localization and New Modes of Treatment" VP Bernard Jaffe, Prof Surgery Tulane KMC Oncology Conference Thurs AM 8/12/99...

Carcinoid Syndrome:
Flushing 80%; asthma 25%; Cardiac lesions 50%; Diarrhea 70%
Aura 2 - 3 min befere flush; asthma = small bronchial constriction...

Localization:
Pancreatic: 4%; small bowel 6%; Meckels 2%; appendix 4%; stomach 6%; Colon 4%; ovary 12 to 50% ; Rectal 1%
***Ovarian lesions: 2/3 of carcinoid syndromes
***Flushing; "racoon eyes" ie periorbital sparing...

Diagnosis:
Urinary 5-AHIAA Normal: less than 9 microgram/d
High False positive in steatorrhea; False negative: 30%.
Whole blood serotonin concentration:
Normal = 168 mg/cc;
Carcinoid = 1655mg/cc
Do provocative test in intermittent flushing...
Pentagastrin Test: causes flushing and GI sy's...
SP = Substance P (Peptide produced by carcinoid)
Small bowel series: occult tumors derived from peripheral circulation...
Octmotile scintigraphy? Somatostatin Receptor: Best for liver mets (Tulane experience: No new lesions found...disappointing.)
Role of Liver: In carcinoid syndrome, the liver does not metabolize 5HT. We can have carcinoid syndrome without liver mets.
Therapeutic Possibilities for liver mets: Embolization; chemo-embolization; surgical resection; transplantation

A. Symptomatic Control:
1. Octreotide: reduces diarrhea; increases urinary output
2. Verapramide: Lowers cardiac output; combine with Octreotide Seen with 80% of pts; esp ± diarrhea + flushing

B. Survival: No good data...Huge variation

C. Interferon: Used in 300 patients; expensive; has side effects...

D. Surgical Resection (if single lesion) Curative results with nodal and peritoneal mets–Mayo: 17%

E. Chemoembolization: 50% regression and longer survival esp with liver mets

F. Liver Transplantation: 15 pts: survival 5 or more years; All cured of syndrome

Potpourri...

My husband cut himself and was treated in the ER. When he returned to the waiting room, I asked what kind of follow-up the doctor had prescribed.

With a totally straight face, he "read" from the printed sheet. "Take it easy, be waited on and have sex twice a day."

At that another man sitting nearby jumped up and exclaimed, "Whatever he's got, I want."
Lois Marks (Reader's Digest)

Interviewed a new patient who was fairly nonchalant...When asked if she'd had any problems with her previous four pregnancies, "No, not really," she grinned, "but for the last one, they had to seduce me with spit!" (For the non-OB's, that translates as "They had to induce me with 'Pit' or pitocin)
Dr. Lynne Forest, Davis Calif. (Stitches Nov '99)

Quotable Quotes...

(Reader's Digest)

"A sharp tongue sometimes cuts its own throat..."
Jim Scancardelli

"It's better to sleep on things before hand than lie awake about them afterward."
Baltaser Gracian

Potpourri...

Manageable care...

Because of her hectic schedule, I'd seen little of the medical student who moved next door to me two years earlier...When I found out that she had graduated, I went over to congratulate her.

"Now," I said, "If I broke my arm, you'll be able to fix it."

"Jack, I've been able to fix your arm for some time," she replied . "The important thing is that now I can bill you for it."
Jack Steinberg

A patient of mine was recovering from major heart surgery and went to a classical music concert. During the performance, the man in front turned around and demanded, "Are you responsible for that infernal clicking noise?"

"It's my new artificial heart valve," she explained.

"Well, could you at least try to make it keep time with the orchestra?" he replied.
Eugene Hughes (Reader's Digest Oct '99)

"A submariner with sleep apnea snored so loud, his snoring could be detected by surface vessels...and had to be transferred out."
(A: told by Milton Erman, Clinical Prof of Psychiatry, UC San Diego during a KMC noon conference on "Insomnia.")

Medical Tidbits...

For Women Only... American College of Obstetricians and Gynecologists recommends:
1. Screenings for hepatitis A and C:
a. Give Hepatitis A vaccine for high risk groups
b. Screen for Hepatitis C for all women 13 and older

2.Diabetes testing: Glucose testing q 3 years for women over age 45...

3.HIV testing for high risk groups ie pregnant women and women with cervical Ca..

4.Mammograms q 1 or 2 years in low risk women in their 40's and annually after age 50. After age 69, researchers studied 10,000 women a n d found that the gains in life expectancy were minimal viz I death/10,000 women

---

Head First: After pouring over the records of 500,000 births, researchers have concluded that vacuum assisted deliveries have the same 0.1% incidence of cranial bleeding as C-section and forceps deliveries...

Boning Up: A study of "statins" (in rats) stunned researchers...They found that "statins" reverse osteoporosis and increase bone density by 50% in lab animals after 1 mos, far exceeding the results from Fosamax or HRT therapy. Trials in humans have yet to begin...

Antidepressants: Less than I/3 of patients on antidepressants are happy...More than 80% admit their depression impairs their social life and 72% say their work performance still suffers...They should talk to their doctors about altering the dose or switching pills...

Medical Tidbits...

A Swedish study confirms that persistant HPV (Human papilloma virus) infection (that lasts more than a year) raises the odds of developing cervical cancer 200 fold.

A huge study of 42,000 pregnant women concludes that consuming more than 5 cups of coffee a day doubles the odds for miscarriage. One or two cups daily seems fine.

NEJM Nov 25

A Surer Cure: Men with advanced prostate Ca can prolong life with surgical or chemical castration. Castration, however, causes loss of libido, muscle loss, fatigue and hot flashes (which may be small price to pay for survival)

Think Zinc: Zinc is used for colds...Studies of infants and children in developing countries show that zinc supplements can reduce the risk of pneumonia 42% and diarrhea 25%. (The recommended daily amount of zinc is 5mg for infants and 10mg for preschoolers)

Post-tramatic Stress Disorder: Fully 25% of youngsters involved in traffic accidents develop post-tramatic Stress Disorder ie, recurring nightmares, trouble concentrating and even difficulty carrying on normal life activities...If symptoms persist more than a month, they should be seen by a doctor...

Get Nuts: A study financed by the Peanut Institute shows that peanut oil is as good as olive oil for lowering choldsterol including LDL...The study subjects ate 2 tablespoonfuls of peanut butter and I 1/2 oz of nuts day...

American Journal of Clinical Nutrition (Dec '99)

Medical Tidbits...

AIDS Update: The AIDS drug cocktail has replaced the protease inhibitors with a new drug, SUSTIVA which reduces HIV to undetectable levels in 50% more patients—and also benefits kids, too. When added to cocktails with protease inhibitors, SUSTIVA doubles the chances that the virus becomes undetectable. Another advantage, SUSTIVA need be taken only once a day...

ADHD Therapy: A new report shows that medication like Ritalin alone or combined with therapy is more effective in reducing symptoms of ADHD (Attention deficit/hyperactive disorder)

Research suggests that patients with heart disease when adviced to take asprin daily are taking Tylenol, Advil and other pain killers which are of no benefit as anti-platelet factors...

HOW TO AVOID A HANGOVER (The basics)
*Alcohol acts like a diuretic, so drink a glass of water for every glass of wine or beer and even more for hard liquor...

*Don't drink on an empty stomach. Alcohol causes blood sugar to drop. Nibble on crackers or bread on the morning after.

*Take Pepto-Bismol if nauseated. Vomiting on an empty stomach can cause esophageal tears...

*Avoid Tylenol or other acetaminophen for your headaches since they are hepatotoxic...

*Avoid ASA or Ibuprofen (unless buffered) since they irritate the stomach lining...

Medical Tidbits...

GERD Thyself: Researchers have found that NSAIDs cause severe GERD...The incidence of GERD doubled among 12,500 Medicaid patients who took NSAIDs routinely...

E-Gad: Some newer Vit E pills have gamma tocopherol...A preliminary study suggests a link between gamma tocopherol and arthritis of the knee...Standard Vit E capsules contain only alpha tocopherol which leaves the knees alone...

Vision Saver: In November, the U.S. Food & Drug Administration approved "Visodyne" as a treatment for macular degeneration.. The caveats with Visodyne are:

a) It is not a cure, but preserves the status quo;
b) It will not restore the vision already lost;
c) Only 1/4 to 1/2 of the 200,000 cases/year of macular degeneration will benefit;
d) Visodyne only works on the "wet" form of macular degeneration...

Time Nov 29

Arthritics Rejoice: Forty million Americans suffer from arthritis: 20 million have osteoarthritis and 3 million have rheumatoid arthritis...and NSAID's cause ulcers and internal bleeding.

The American College of Rheumatology and JAMA published reports comparing Celebrax (Cox II inhibitor) to Naproxen. Both drugs relieved sy's of RA, 36% Naproxen patients got ulcers compared to 4 to 6% taking Celebrex.

Another new drug Remicade, approved by FDA in November is taken with methotrexate for RA and reduces arthritic sy's by 20%. But the one very serious side effect of all these new meds is expense.

NSAIDs cost as little as 20¢ a pill. The Cox II Inhibitors are 15 times more and Remicade is expected to cost $10,000 for the first year's supply...

Time Dec 6

A Major study shows that moderate amounts of alcohol not only ward off heart disease, but lowers risk of strokes by 20% in men who drank anywhere from one glass a week to one glass a day...Any kind of alcohol works, but don't go overboard...More than a few drinks a day raises blood pressure and heightens your risk of strokes...

Time Nov 29

Children Act Fast
So Do POISONS!



Hawaii Poison Center
More than 40 years of service
941-4411
Neighbor Islands Toll Free
1-800-362-3585
Donate to help us save lives

Nurses the of Healthcare

Registered Nurses, Licensed Practical Nurses, Medical Assistants

Qualified and experienced in a wide variety of job settings.

All applicants carefully screened and matched to your specific job.

We are fully responsible for payroll, taxes, benefits and insurance.

Kahu Malama Nurses, Inc.

Short & Long Term Staff Relief and Permanent Placement

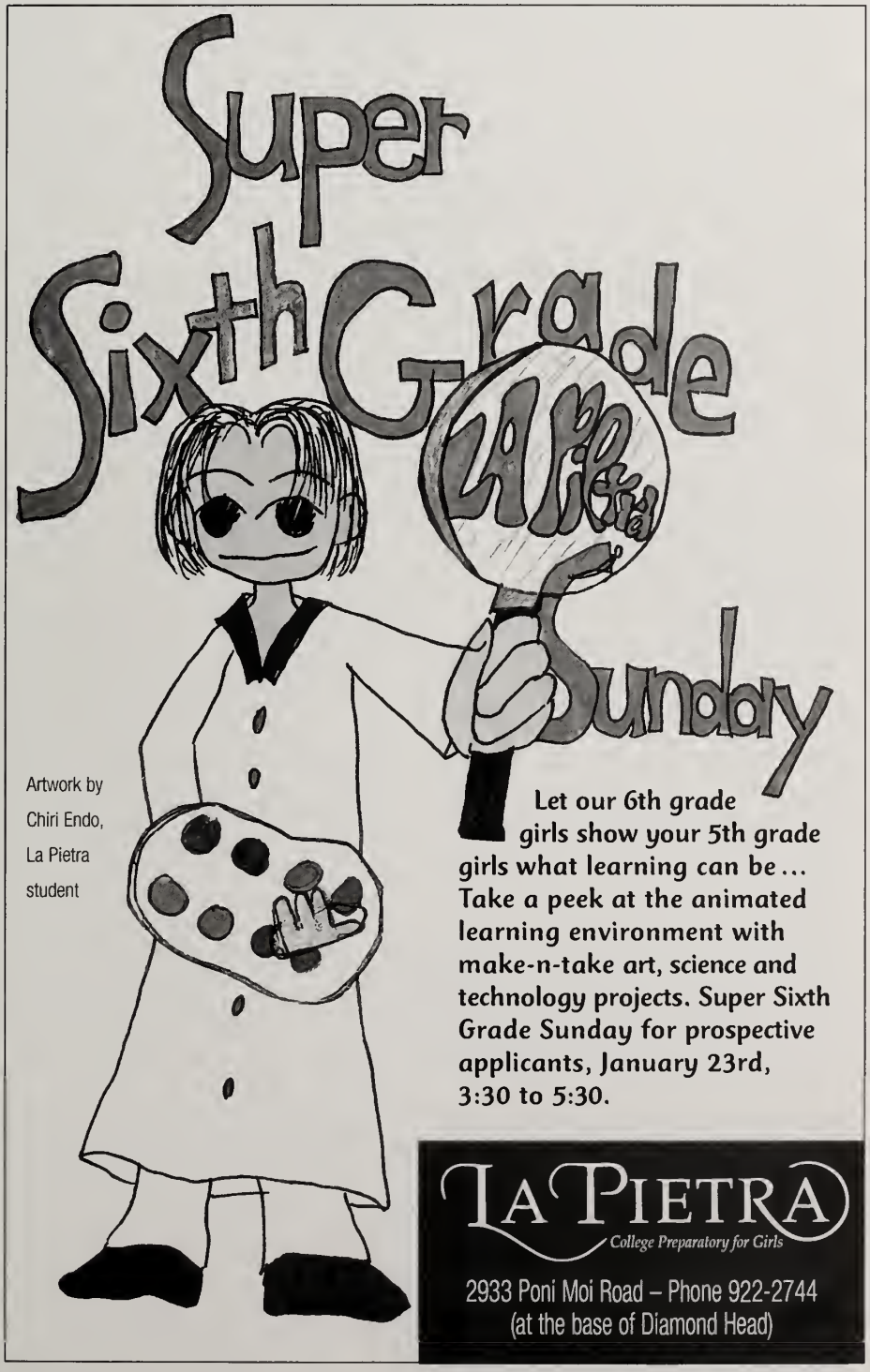
Serving Hawaii since 1982

Available 24 hours

(808) 951-0111 Fax: 949-3834

Inter-island: 1-800-773-9021

e-mail: nurses@kahumalama.com



Artwork by Chiri Endo, La Pietra student

Let our 6th grade girls show your 5th grade girls what learning can be... Take a peek at the animated learning environment with make-n-take art, science and technology projects. Super Sixth Grade Sunday for prospective applicants, January 23rd, 3:30 to 5:30.

LA PIETRA

College Preparatory for Girls

2933 Poni Moi Road – Phone 922-2744

(at the base of Diamond Head)

Classified Notices

To place a classified notice call 536-7702.

Office Space

Ala Moana Bldg.– PHYSICIANS WANTED to share space and support services. Interest in physical rehab. preferred. We have flexible rental arrangements starting at one half-day per week. Run your practice with no fixed overhead. Contact Dr. Speers, REHABILITATION ASSOCIATES, 955-7244.

A.Y. Wong Bldg.– Grn flr 1780 sf, 3rd flr 806 sf, improv MD's ofc. $1.12 sf gross inc. A/C 955-7585. A.Y. Wong Bldg. 1507 S. King St. #301-A, Honolulu, HI 96814.

Locum Tenens

BOARD CERTIFIED FAMILY PRACTICE.– 15+ years caring clinical experience in Hawaii. Office coverage for 1/2 days, own MIEC Policy, fee flexible, call anytime Deborah C. Love MD: Home Oahu: (808) 637-8611; Cell Ph: 295-2770.

Wanted

INTERNAL MEDICINE OR FAMILY PRACTICE.– Hawaii Permanente Medical Group/Kaiser Permanente: Hawaii's most established multi-specialty group of 300 physicians recruiting for BC/BE internist of family practitioner for busy outpatient clinic (and call for IM) based at new 7-MD clinic in Nanakuli (west Oahu). Position available ASAP. Applicant must have a commitment to quality care, patient advocacy, and involvement in patient and professional education (patients include elderly population w/ multiple medical problems). Competitive salary, excellent benefits, relocation assistance and more. Send CV to: Physician Recruitment, HPMG, 3288 Moanalua Rd, Honolulu, HI 96819 of Fax (808) 834-3994. EOE.

THE U.S. TAE KWON DO UNION. – is looking for doctors, nurses, physical therapist, and athletic trainers to volunteer time providing triage and emergency care at the U.S. Open Tae kwon Do Championships. The event will be held at the Blaisdell Center Arena in Honolulu, February 3rd - 6th, 2000. The event begins with taping around 7:30 AM, competition begins at 9:00 AM and continue until approximately 8:00 PM daily. They are looking for volunteers to work any amount of time.

They expect 1000+ competitors from around the world, many will be the same athletes to compete in the 2000 Olympics in Sydney.

Those interested in volunteering should send a letter of intent specifying the days and times they wish to work, a current resume, and copy of proof of malpractice coverage and a copy of their state license to: Trish Bare, Medical Coordinator, U.S. National Tae Kwan Do Team Events, 4117 SW 20th Ave., #385, Gainesville, Fl 32607. Phone/Fax (352) 375-1374.

The Weathervane Russell T. Stodd MD

Any Error In Calculations Will Be In The Direction Of Most Harm.

The American Society of Cataract and Refractive Surgery (ASCRS) is continuing to explore the reports of corneal melts occurring following the use of generic diclofenac. The Executive Committee of ASCRS and the Cataract Special Interest Group unanimously agree that corneal complications can result from the use of topical NSAIDS now on the market. So far, the problem is case reporting, but ASCRS has contracted with Johns Hopkins School of Medicine to conduct additional epidemiological studies with those physicians who have reported complications. Contrarily, CIBA Vision has reviewed the results of an internal investigation and ongoing safety data and announced that it is confident in the safety of its nonsteroidal *Voltaren Ophthalmic*, and will not recall or suspend distribution of the product. Moreover, the company stated that the recent complications reported in the ASCRS survey do not reflect upon the safety of topical NSAIDs. Somehow, one cannot avoid the feeling that this issue is headed for some expensive litigation.

Beauty Is Only Skin Deep, But Ugly Goes A Lot Deeper.

Sometimes the creativity and audacity of entrepreneurs is astounding. Ron Harris, a self-described "renowned" fashion photographer, intends to auction the ova of women chosen only for their physical beauty. Using his website for a venue, he is inviting opening bids ranging from $15,000 to $150,000 to infertile couples desperate enough to seek this mechanism for breeding. Harris claims he has had extensive experience breeding horses, and "hundreds of hours spent researching the egg-and-sperm business." The frightening part is that there are people willing to sell their ova and sperm, and quite obviously, there are buyers. Nothing illegal here, for like reproduction itself, it is all a matter of personal choice. But is it right to tempt people who are under stress and vulnerable, and who have to find some ready cash? Moreover, beautiful people don't necessarily have attractive offspring, and there is no way to provide a money back policy. Remember that old Johnny Mercer lyric, "You're some ugly child." Of course, the issue is not the science of procreation, but the art of promotion.

The Place Is So Popular That No One Goes There Any More.

The disturbing apparent fact is that the pool of applicants for medical school is shrinking. Between 1997 and 1998, 4.7% fewer students were seeking a career as a doctor of medicine, and the number is down 13% from 1996. Theories abound – a changing healthcare industry, a booming economy with more and varied opportunities for bright young people, a loss of physician autonomy – these are a sample. Ask any physician whether in "private" practice, or under contract, and you will hear the answer. Sadly, a magnificent, honorable profession is being systematically degraded. The invasion of the bean counters, lawyers, contractors, DEA thugs, and investigators, all endorsed and encouraged by a bloated federal and private insurance bureaucracy, is the most likely explanation. Despite the exciting, exploding technology with great advances in therapeutics and pharmaceuticals, implants, transplants, imaging, fiberoptics, microscopy, lasers, and minimal invasive procedures, many doctors are no longer happy with their chosen profession.

The Primary Function Of A Bureaucracy Is To Create More Bureaucracies.

Relative to the above paragraph, now the Department of Health and Human Services will spend seven million dollars to train 15,000 more volunteers to swell the number of the Senior Patrol to 21,000. These Medicare "fraud busters" are retired professionals who undergo several days of training about Medicare fraud. They in turn will educate 250,000 seniors on how to spot problems on their Medicare bills. HHS says that physicians should not be anxious if they're honest. Yeah, Right! Now doctors have to recognize that the blue-haired retired school teacher in the reception area, might be searching for a flaw in your practice in order to realize that nice bounty built into the fraud penalty. Thanks a lot, Donna Shalala, for driving a poisonous stake of suspicion between doctor and patient, when the real cheaters are elsewhere.

All Judges Judge, But Not All Have Judgement.

If you have lingered under the impression that juries are more likely than judges to rule in favor of the plaintiff, you are wrong. While juries favored plaintiffs less than 24% in malpractice cases, judges sided with them in 38%, according to the Bureau of Justice Statistics' Civil Justice Survey of State Courts. Judges were also likely to grant higher awards with a median of $454,000, compared to juries $254,000. The only statistic which might be deemed favorable is that cases decided by judges move through the system more quickly with 74% resolved in less than two years. Just 37% of jury cases were decided within two years.

When You Have Two Masters, One Always Has A Bigger Whip.

Cynthia Herdrich had severe belly pains and tried to see her HMO physician. Because the facility was booked, she had to wait more than a week. Her inflamed appendix ruptured and peritonitis developed. She ultimately recovered, but sued her doctor and the group for malpractice, and was awarded $35,000. The patient further alleged that the incentive structure that allows physicians to profit from decreased utilization, results in a conflict of interest which is actionable by law. Attorneys for the physician and the HMO claim that the court has created a new form of liability for physicians and managed care organizations. Now the U.S. Supreme Court will decide whether a patient can sue her physician-owned HMO for allegedly putting profits ahead of care. Consumer advocates have long held that financial incentives harm patient care. In simple terms, can a doctor serve two masters? This case ought to be a no-brainer, and it's about time.

Doctors Have Become The Pinata At The Medical Party.

Disciplinary action against physicians varies widely from state to state, according to a study by Public Citizen, a Nader advocacy group in Washington D.C. For example, for 1998 in Alaska 15.4 cases per 1,000 physicians ranked at the top of the list, while Tennessee cases were 0.85/1000, at the bottom of the list for discipline. To put it more simply, the doctor in Alaska is 18 times more likely to be disciplined than in Tennessee. Hawaii ranks toward the lower numbers at 39th with 2.94 per 1000. Actually in Hawaii in 1998, 10 doctors out of a population of 3399 non-federal physicians in Hawaii were disciplined in 1998. The disparity between states is largely due to a lack of adequate staff or budget to do a good job of investigating and following up on complaints.

The Bare Facts Could Tick You Off.

You might expect that nudists would be more subject to tick bites than those of us who cover our arms and legs in the outdoors. But strangely, that is not correct. Research done at the University of Connecticut Health Center with the cooperation of 300 nudist campers, found just one case of Lyme infection. One explanation is that while deer ticks are present, they don't like nudists. Despite having all that appetizing collection of flesh, the ticks seem to prefer to do their biting and blood sucking under cover.

We're All Going Down The Same Road In Different Directions.

Now with a booming economy, unemployment near record low, inflation held in check, and stock market roaring past 11,000 on the Dow Jones Industrial Average, the number of uninsured should be steadily decreasing. But, that is not true. This year, 43 million Americans find themselves without health care coverage, according to the U.S. Census Bureau. That is 1.7 million more than 1996, and is 16.1% of the U.S. population. Why is this? And if these data are true, what happens when times get tough? Would an employer mandated health plan such as Hawaii's law, work to ease the problem?

ADDENDA

❖Flu was first described by Hippocrates in 412 B.C.

❖The first person killed by a train was run over during the opening ceremonies of the Liverpool and Manchester railway in England, September 15, 1830.

❖Elvis never gave an encore - not once.

❖The Supreme Court has ruled that there can be no nativity scene in Washington, D.C. This is not for separation of church and state, but they couldn't find three wise men and a virgin.

Aloha and keep the faith —rts■



Incomparable Beauty

Incomparable Dedication

MIEC

- Professional liability insurance for nearly a quarter century
- Doctor-owned, not-for-profit
- Sponsored by Hawaii Medical Association

Medical Insurance Exchange of California
6250 Claremont Avenue
Oakland, California 94618
Telephone **800-227-4527**
Fax 510-654-4634
website: www.miec.com

Hawaii claims office
1360 South Beretania, Suite 405
Honolulu, Hawaii 96814
Telephone 808-545-7231



Hawaii medical journal
v. 59
no. 1
January 2000
Received on: 02-09-2000
Brown University Library
SCI

HAWAII MEDICAL JOURNAL

February 2000 Volume 59, No. 2 ISSN: 0017-8594

L-STYLE
R15
HP5v
SCT



MIXED ADC 967
Sciences Library
Serials Dept
Box I
Brown University
Providence RI 02912-0001

Special Issue on ACP-ASIM and Issues in Current Healthcare



For Commercial HMO

"Excellent"

The National Committee for Quality Assurance (NCQA) has designated ***Health Plan Hawaii's*** *commercial HMO as one of an elite group of health plans to earn its new "Excellent" accreditation status.*

This distinction—shared by only 40 plans nationwide—is awarded on the basis of each plan's commitment to clinical excellence, customer service and continuous improvement.

Needless to say, we couldn't have done it without the outstanding efforts of the more than 1,400 physicians participating with ***Health Plan Hawaii*** *health centers:*

OAHU
Central Medical Clinic
Central Oahu Physician Hospital Organization
Haleiwa Family Health Center
Hawaii Filipino HealthCare, Inc.
Hawaii IPA
Medical Arts Clinic, Inc.
Oahu Physicians Group
Pacific Health Care
Personal Care Network:
- Castle Health Group
- Kuakini Health Network
- St. Francis Physician Hospital Alliance

Straub Clinic & Hospital
The Honolulu Medical Group, Inc.
Waianae Coast Comprehensive Health Center

HAWAII
Bay/Hamakua Health Center
East Hawaii IPA
Hilo Medical Associates, Inc.
Kona IPA
North Hawaii Physicians Group, Inc.
Straub (Hilo & Kailua-Kona)
West Hawaii Physicians Group

KAUAI
Kauai Medical Associates
Kauai Medical Clinic

LANAI
Straub

MAUI
Hawaii IPA—Maui Physicians
The Maui Medical Group, Inc.

Health Plan Hawaii™

A Federally Qualified HMO Affiliate of HMSA

At ***Health Plan Hawaii****, quality is at the heart of everything we do. Our heartfelt thanks to the participating health centers and physicians whose commitment to excellence sets the standard for quality care in our island community.*

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
Vincent S. Aoki MD, Benjamin W. Berg MD,
John Breinich MLS, Satoru Izutsu PhD,
James Lumeng MD, Douglas G. Massey MD,
Myron E. Shirasu MD, Frank L. Tabrah MD,
Alfred D. Morris MD

Journal Staff
Managing Editor: Becky Kendro
Editorial Assistant: Drake Chinen

Officers
President: James Lumeng MD
President-Elect: Philip Hellreich MD
Secretary: Gerald McKenna MD
Treasurer: Paul DeMare MD
Past President: Patricia L. Chinn MD

County Presidents
Hawaii: David Camacho MD
Honolulu: Walter K.W. Young MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Patrick Aiu MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 1999 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 40

Medical School Hotline
John S. Melish MD and Richard T. Kasuya MD. 40

Angioimmunoblastic T-cell Lymphoma (AIL-TCL) Following Macrolide Administration
Terence Y.J. Sasaki (Medical Student) and Kenneth N.M. Sumida MD 44

Postural Hypertension in Elderly Men- The Honolulu Heart Problem
Kannayiram Alagiakrishnan MD, Kamel Masaki MD, Irwin Schatz MD, J. David Curb MD, MPH, and Patricia Blanchette MD, MPH 48

Evaluation of Late Onset Bipolar Illness During Menopause
Takako Vivian Ishimaru-Tseng MD 51

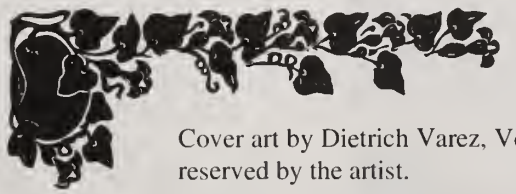
Coronary Artery Bypass Grafting Performed With Or Without A Bypass Pump: Early Results
Jeffrey D. Lee MD, Collin R. Dang MD, Sharyl Taoka (Medical Student IV), B. Jason Bowles MD, and E. William Johnson MPH 54

Use of Donepezil in Elderly Patients with Alzheimer's Disease- A Hawaii Based Study
Kannayiram Alagiakrishnan MD, Warren Wong MD, and Patricia Blanchette MD, MPH 57

Special Presentation to the State Legislature: Hawaii Coalition For Health, December 8, 1999 62

Classified Notices 76

Weathervane
Russell T. Stodd MD 78



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

Hula

Depicting the traditional dance of Hawaii known the world over. Shown here is a dancer accompanied by drum.

Editorial

Special Issue: American College of Physicians – American Society of Internal Medicine Hawaii Chapter

Norman Goldstein MD
Editor, Hawaii Medical Journal

This Special Issue features two societies comprised of specialists and internists: The American College of Physicians, and the American Society of Internal Medicine. Many excellent papers and posters were presented at the last Hawaii Chapter meeting on March 19, 1999. Five of these presentations are published in this issue, which will also be distributed to attendees and exhibitors at the ACP-ASIM Hawaii Chapter meeting to be held on March 3 and 4, 2000.

Also within, are presentations made on December 8, 1999 at the informational program for our State legislators sponsored by the Hawaii Coalition for Health. Included are remarks by Coalition founder and president, Arlene Jouxson-Meyers, MD JD, MPH; new Medical School Dean, Edwin Cadman; Dean of the School of Nursing, Dr. Roseanne Harrigan; Associate Dean of Wm. S. Richardson School of Law and Professor of Law, Medicine and Psychiatry at NYU Law School, Sylvia Law; and Regent of the University of Hawaii, A.Q. McElrath.

In addition, this Special Issue contains an insert and membership application for the Hawaii Medical Association. If you are not already a member of the HMA, now is the time to join. We need emerging as well as established physicians in the HMA to maintain and improve the practice of medicine in Hawaii. Our Hawaii medical community values your participation. Join us today.

Norman Goldstein MD, FACP, Editor

Until there's a cure, there's the American Diabetes Association.

Medical School Hotline

Clinical Skills Training at John A. Burns School of Medicine (JABSOM): Teaching and Learning the Art, Craft and Science of Clinical Practice

John S. Melish MD and Richard T. Kasuya MD

The medical profession combines a variety of skills, attitudes, and a scientific knowledge base. The capacity of an individual physician to care for an individual patient requires that the physician establishes trust and collects appropriate data in relation to the patient's concerns, signs, and symptoms. He or she then establishes reasonable diagnostic hypotheses based on that data, and then prescribes evidence-based treatments. This requires the understanding and consent of the patient, making the doctor a teacher and guide. Our student-physicians refine these skills over a lifetime of practice. This process begins at the JABSOM the first week of medical school and continues for the next four years.

As central as these skills have been to the practice of medicine, they have gained even more importance in this day of resource allocation and managed care. Physicians in general, and primary care physicians in particular, have been asked to rely more on their clinical data collection and acumen and less on the non-judicious use of technological tools, in their care of patients. Our goal and commitment is to provide excellent and qualified practitioners to our community.

At the JABSOM, history taking and physical examination skills have been taught in first two years of medical school since its inception in 1970. At that time, JABSOM was a two-year medical school whose graduates finished their training at Mainland schools. Our students appreciated that they were as well or even better prepared than their Mainland counterparts to challenge the third year clinical clerkships.

When the JABSOM became a four-year institution in 1975, this policy of early introduction to patients continued. In the first year, students were instructed in the elements of a standard physical examination that they practiced on each other and learned interviewing skills beginning with a patient profile. The students learned the basic physical exam maneuvers on each other but practiced interviewing skills on volunteer patients in an outpatient setting. In the second year, students learned organ-directed interviewing and physical examination skills in the context of a lecture-based clinical correlation course, Introduction to Clinical Medicine, throughout the second year. (This course ran concurrently with basic science courses in physiology, pharmacology, psychiatry, and pathology, and public health, the familiar medical school curriculum of the time for second year students.) Clinicians lectured on approaches to clinical evaluation of diseases by systems. With each block of lectures, a specific laboratory was held where "extended physical examination skills" were taught. At the same time, individual students were assigned to a tutor who found them patients with problems corresponding to the unit of study. They observed the students during the interview and examination process, giving them

valuable feedback on their skills and their effectiveness in obtaining data and reporting it both orally and in written form. This experience occurred every other week and represented a time commitment of six to eight weeks from members of the clinical faculty. This meant recruiting between 20 and 30 faculty members (sometimes more) every 6 to 8 weeks, a full time job for the coordinator of the Introduction to the Clinical Medicine Course. Again, students generally made an easy transition to the third year clerkships as a result of this patient-related experience.

In both the first and second years, students learned to use the Problem Oriented Medical Record System developed and promoted by Dr. Lawrence Weed. This was adapted to JABSOM and became the standard format for both the students and for the residents in our integrated residency training program. Progress note writing in this format was taught as they entered the third year clerkships. This approach to documentation continues to the present.

Prior to 1989 and the curricular reform of that year, a faculty member evaluated the students' clinical skills at the end of the medical clerkship. In this exercise, the faculty member observed the student performing a complete history and physical examination on a hospitalized patient, making an oral presentation, and completing a problem oriented medical record. The examiner reviewed a written History and Physical Examination Report, a complete problem list, and an assessment of the three most important clinical problems, along with a diagnostic and treatment plan and plans for patient education. The students' findings were confirmed at the bedside, with immediate feedback to the student. The student then requested additional data based on his or her plan. This was obtained by the observer from the chart and reported to the student who then wrote a progress note on the three major problems. The observer graded the student based on a standard form, gave feedback as to all of the elements of the exercise, including the professional impression and attitude evinced by the student.

In 1989, the then medical school dean, Christian Gulbrandsen, instituted a wide-ranging curricular change. At that time, problem-based learning (PBL) became JABSOM's way of integrating appropriate medical information with the data collection and reasoning processes unique to medical diagnosis and management. Clinical skills became an integral part of the curriculum.[1] In this context, students interview and examine patients that fall within the differential diagnosis of the patient problems they study in the classroom setting. This integration provides additional relevance and meaningfulness to all aspects of JABSOM's students educational experience.

In Unit 1 of the M.D. Program curriculum, students learn basic physical examination skills and clinical anatomy in an integrated course.[2] For example, in one week students will be studying the PBL health care problem of a patient suffering from an acute myocardial infarction. They will spend one morning that week with clinical faculty learning the basic cardiac physical examination and spend that same afternoon with faculty from the Department of Anatomy reviewing the heart and mediastinal anatomic relationships on cadavers and instructional models. Students also spend one afternoon every-other week in the community interviewing and examining actual patients under the supervision of practicing physicians.

Patient contact and the learning of the clinical skills relevant to the Health Care Problems under study in the core PBL curriculum continue throughout the remainder of years 1 and 2. Faculty preceptors work with small groups of students, and demonstrate and teach the skills required to collect data by interview and physical examination at the bedside in both ambulatory and hospital settings. These sessions are held for three hours each week, and are supplemented by periodic large group clinical skills demonstration and practice laboratories led by experienced and expert clinical faculty from various disciplines in medicine.

In Unit 6 (the clinical clerkships) and Unit 7 (the senior electives), clinical skills training becomes intertwined with the students' day-to-day experiences in their required clinical clerkships (Surgery, Obstetrics and Gynecology, Internal Medicine, Family Practice, Pediatrics and Psychiatry), required senior Emergency Medicine rotation and senior clinical electives. Under the guidance and supervision of clinical faculty, students continue to develop their skills in professional communication, history taking, physical examination and physical diagnosis, and medical decision-making.

It is very important to recognize that clinical skills experience relies heavily on the generosity and support of volunteer physicians across all disciplines and located throughout the community. These physicians volunteer their time and expertise to teach medical students the art and science of clinical medicine. This is a tremendous investment in the future quality of medical care in our community.

Evaluation of students' clinical skills performance is done via a number of methods. Throughout the four years, faculty evaluate each student using a checklist of skills and learning objectives. Students are videotaped performing the physical examination sequence for formative feedback. Students are also evaluated using standardized patients in Objective Structured Clinical Examinations (OSCEs) periodically throughout the four years of medical school training. The JABSOM's Center for Clinical Skills administers these examinations, and also trains and provides standardized patients for learning experiences throughout the first two years of training. Early in their training, students have the opportunity to interact with these standardized patients to practice skills ranging from counseling an adolescent on the dangers of high risk behaviors, to providing smoking cessation education to a patient at risk for heart disease, to comforting the grieving mother of a child injured in the home. Later in their training, students are expected to obtain satisfactorily complete histories, perform focused physical examinations and demonstrate exemplary professional and communication skills with standardized patients in formal OSCEs. Of note, the United States Medical Licensing Examination (USMLE) Step 2 expects to begin incorporating an OSCE component in the near future. JABSOM's strong standardized patient program will definitely help its students best prepare for this national requirement.

Clinical skills are a central component of the education of future physicians. The University of Hawaii JABSOM is fully committed to producing outstanding clinicians by providing a clinical skills educational experience that is integrated, innovative, rigorous and progressive.

References

1. University of Hawaii John A. Burns School of Medicine. 1999-2000 General Guide to the M.D. Program. August 1999.
2. Kasuya RT, Nelson M, Melish J. The Integration of Clinical Skills and Clinical Anatomy in Medical Education. HMJ 56(4):89.

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA

FIVE WAYS TO DIE ON THE GOLF COURSE:

1. Hit by a golf ball.
2. Run over by a golf cart.
3. Whacked by a golf club.
4. Struck by lightning.
5. Forgot your hat.

Surprisingly, one million new cases of skin cancer are detected every year. One person an hour in the U.S. dies from melanoma, the deadliest form of skin cancer. If you spend a lot of time in the sun, you should protect yourself. One out of five Americans develops skin cancer during their lifetime. Don't be one of them. Stay out of the midday sun. Cover up. Wear a hat. Seek shade. And use sunscreen. For more information on how to protect yourself from skin cancer, call 1-888-462-DERM or visit www.aad.org.

AMERICAN ACADEMY OF DERMATOLOGY

Angioimmunoblastic T-cell Lymphoma (AIL-TCL) Following Macrolide Administration

Terence Y.J. Sasaki (Medical Student*) and Kenneth N.M. Sumida MD**

Abstract

Angioimmunoblastic Lymphadenopathy with Dysproteinemia (AILD) is a rare benign reactive process which often follows exposure to certain drugs such as penicillin. Treatment with corticosteroids usually reverses the process, however there have been reports of 18% of cases evolving into non-Hodgkins lymphoma. In our case report, we present a relatively healthy woman with history of various drug hypersensitivities who developed AILD and resultant lymphoma after treatment with azithromycin.

A review of the literature has failed to find reports of AILD following macrolide exposure. Clonality, not present in other forms of hyperplasia, is present in AILD and immunosuppression may account for this difference. It is difficult to say whether the drugs are simply coincidently associated or actually cause, maintain, or exacerbate clonality in AILD and facilitate malignant transformation.

Introduction

Angioimmunoblastic Lymphadenopathy with Dysproteinemia (AILD) is a rare benign reactive process which often follows exposure to certain drugs such as penicillin. It is characterized by generalized lymphadenopathy, hepatosplenomegaly, and constitutional symptoms. Laboratory abnormalities include derangements in blood counts and a polyclonal gammopathy. Hemolytic anemia and morphologic bone marrow change are sometimes seen. Treatment with corticosteroids is typically successful in reversing the process however there have been reports of 18% of cases evolving into non-Hodgkins lymphoma. Evidence of clonality with subsequent malignant transformation suggests a possible explanation for drug association with AILD. We report a case of angioimmunoblastic lymphadenopathy without dysproteinemia evolving into T-cell lymphoma following macrolide administration.

*John A. Burns School of Medicine
University of Hawaii

**Director of Medical Education
Kuakini Medical Center

Correspondence to:
Terence Y.J. Sasaki
3215 Ala Ilima St. 805B
Hon., HI 96818-2909

Case Report

History of Present Illness:

This 67y/o Japanese woman, with history of allergic rhinitis and hypothyroidism diagnosed two months prior to admission, was hospitalized one month prior to admission for new onset congestive heart failure and atrial fibrillation with rapid ventricular response. During this hospital stay, bilateral mastitis was noted with associated tender axillary adenopathy and treated with azithromycin. These resolved but follow-up two weeks later revealed generalized lymphadenopathy and biopsies of left anterior cervical and right inguinal nodes were taken. The local pathologist reported an abnormal immune reaction versus Hodgkin's and the specimens were sent to Stanford University for an opinion. Throughout this time the patient continued to suffer nausea, fatigue, appetite loss, and a slight nonproductive cough and on the day of admission felt extreme chills, shakes, and diaphoresis. She denied chest pain, shortness of breath, headache, dizziness, photo- or phonophobia, constipation, diarrhea, or symptoms of urinary tract or upper respiratory infection.

History:

No other medical or surgical history was significant. The patient was allergic to amoxicillin, cephalexin, and donnatel with reactions ranging from rash to difficulty breathing. She was on Synthroid, Lasix, Digoxin, Plavix, and Cardizem. Family history was unremarkable except for her father who died of liver failure. She did not have any tobacco, alcohol, or drug use, and denied travel and exposure to animals or chemicals. She had up-to-date immunizations and had received BCG vaccination, although her PPD was negative. Recent mammogram was negative.

Physical Examination:

On exam, temperature was 105.2° and blood pressure was 143/63. Left nostril occlusion was present with mucus and serosanguinous drainage but without septal deviation and the oropharynx was moist but erythematous without exudate. Diffuse, mobile, rubbery lymph nodes 1-3 cm which were nontender and non-fluctuent were noted especially in the right submandibular region. Neck was supple without jugular venous distention. Lungs were clear except for slight crackles and decreased fremitis in the right base. Breasts were within normal limits. Heart was tachycardic and an S4 with grade II/VI systolic ejection murmur was present at the base. Mild hepatosplenomegaly was present. No fecal occult blood was noted. Good distal pulses and no clubbing, cyanosis, or edema were present in the extremities.

Laboratory Findings:
Laboratory investigations showed a white count of 12.1, 28% bands, and 12% monocytes. Hemoglobin and hematocrit were 10.4 and 30.7 respectively and electrolytes were normal except for bicarbonate at 31. Blood urea nitrogen and creatinine were 27 and 1.2. Urinalysis contained 2+ blood and trace protein. Chest films showed diffuse bilateral infiltrates at the bases while electrocardiogram confirmed sinus tachycardia and revealed left atrial enlargement and premature ventricular contractions. A "fever of unknown origin" work-up was performed with negative blood cultures & serologies and thyroid stimulating hormone was within normal limits. C-reactive protein was 6.5.

Hospital Course:
Throughout her course, serologic studies, cultures, and immunoelectrophoresis continued to be unremarkable. Patient's condition improved slightly with empiric trovofloxacin but then deteriorated into a sepsis-like picture on the third hospital day. The patient needed to be transfused. Marrow aspirate showed only hyperplasia of megakaryocytes. Preliminary node biopsy results from Stanford suggested AILD and prednisone was initiated at 40mg BID and most of her symptoms rapidly diminished. She continued to have residual right submandibular lymphadenopathy. On day 12, routine exam revealed a 3x2cm erythematous mass causing slight nasal septal deviation and head CT and MRI showed an infiltrating left nasal lesion which had biopsy findings consistent with lymphoma. Chemotherapy with Cytoxan and vincristine resulted in regression of the lesion.

Discussion

First recognized by Flandrin and Westerhausen,[1,2] angioimmunoblastic lymphadenopathy with dysproteinemia (AILD), a term coined by G. Frizzera in 1974,[3] is a rare benign reactive process with a lymphoma-like presentation characterized by generalized lymphadenopathy, nontender hepatosplenomegaly, and constitutional symptoms. It was Lukes et al., however, who proposed that AILD was associated with both benign and malignant forms.[4] For the purposes of this discussion, AILD, immunoblastic lymphadenopathy (IBL), and lymphogranulomatous X (LgX) have been considered one entity, AILD (their differences are noted on table II).

Clinical Features
Generalized lymphadenopathy is the *sine qua non* of AILD and these nodes often rapidly develop into soft, variably tender, movable, but not matted masses, measuring 2-3cm. Fever occurs in two thirds and chills, night sweats, malaise, anorexia, and weight loss give clue to the systemic nature of this entity. Peak incidence occurs in the seventh and eighth decades. A prodrome of maculopapular rash can be seen, without preferential location, in more than a third of patients.[5] It is commonly pruritic and follows administration of drugs such as penicillin.[2,6-8] Men are slightly predisposed, with a 1.2:1 ratio.[5]

Clinical Findings at Presentation[9-14]

Findings	% Patients
Lymphadenopathy	100
Generalized	81
Localized	21
Organomegaly	
Liver	73
Spleen	63
Fever	74
Pruritis	48
Skin Rash	45

Laboratory findings
In AILD, normochromic, normocytic anemia, particularly Coombs-positive and hemolytic, can be evident. Leukocytosis and eosinophilia may also complicate the picture. Dysgammaglobinemia, most often a polyclonal hypergammopathy, is seen in up to three-fourths of patients.[14] Low CD4 T-cell counts may be discovered during active phases of the disease.[15] An elevated lactate dehydrogenase is present in 25-85%, often with accompanying hemolytic anemia.[10,14]

Peripheral Blood Findings in AILD[9,11-13,16]

Findings	% Patients
Anemia (autoimmune)	82 (45)
Lymphopenia/-cytosis	37/5
Leukocytosis	33
Neutrophilia/-penia	26/1
Plasma cells/immunoblasts	23
Thrombocytopenia	19
Eosinophilia	18
Monocytosis	13

Serological Profile of AILD[9-13]

Findings	% Patients
Dysgammaglobulinema	
Polyclonal hypergammapathy	70
Hypogammaglobulinema	7
Monoclonal component	5
Normal gammaglobulins	23
Positive Coombs test	39

Histological diagnosis
Marked proliferation of small vessels with hyperplastic endothelium and pleomorphic infiltrate rich in immunoblasts distributed in an uneven pattern typify nodal biopsies. Pronounced and diffuse obliteration of nodal architecture can be seen, with a third of victims having some burnt-out germinal centers scattered across the field. There is often sludgy, eosinophilic material between cells. Serial nodal samples may show actual recovery of nodal architecture or

extensive fibrosis.[7] Reactive morphological changes may be seen in the spleen, bone marrow, liver, and skin but are usually less prominent. The marrow aspirate may show mild plasmacytosis or red cell hyperplasia, particularly in the setting of hemolytic anemia, but will be normal in up to half of patients.[17]

AILD is distinguished from neoplasm because peripheral sinuses and remnants of germinal centers are preserved, the angiocellular changes doe not occur with any known malignant lymphoma, and the end result in AILD is lymphocytic depletion with perivascular fibrosis not tumoral replacement of organ structures. Surgical staging is not recommended unless progression to lymphoma has occurred.[19]

Table 1.– Classification of AIL-TCL[18]

Revised European American Lymphoma (REAL) Classification	Peripheral T-cell and NK- cell neoplasm
Rappaport	Not listed (diffuse mixed lymphocytic-histiocytic, histiocytic)
Kiel	T-cell, angioimmunoblastic (AILD)
Lukes-Collins	IBL-like T-cell lymphoma
Working Formulation	Not listed (diffuse mixed small and large-cell, diffuse large cell, large cell immunoblastic)

Although rare, AIL-TCL account for 4% of all lymphomas (20% of T-cell) by Kiel classification (table I).[20] AILD-like lymphomas are surprisingly similar to IBL-like lymphomas first described in Japan.[21,22] Virtually all AILD-like lymphomas are peripheral T-cell but rare B-cell lymphomas, often EBV associated, exist.[23-27] Expanded FDC clusters & CD 21-positive reticulum cells surrounding post-capillary venules have been found to be specific for AILD-like lymphoma.[4,20]

Table 2.– Morphological Criteria: Diagnosis of AILD, Immunoblastic Lymphadenopathy (IBL), and Lymphogranulomatosis X (LgX)[3,4,9,10,12,28]

Common Findings
- Diffuse obliteration of the lymph node architecture
- Proliferation of small vessels (esp postcapillary venules)
- Polymorphous cytology
- Absence of florid germinal centres

Differences
- Immunoblasts and plasma cells are abundant in AILD and IBL; in LgX either immunoblasts, plasma cells, lymphocytes, or epithelioid cells may prevail
- In IBL, the lymph node is lymphocyte-depleted and hypocellular
- PAS-positive interstitial material is always present in IBL, but not in AILD and LgX
- Burnt out germinal centres may occur in AILD and LgX, but not in IBL

Differential diagnosis

Distinguishing collagen vascular disease, lymphoma, infection, drug reaction, and graft-versus-host disease (GVHD) from AILD is a diagnostic dilemna. Despite their shared constitutional and clinical similarities, the vasculitis, renal assault, and epidermal skin lesions that are prominent in SLE are absent in AILD.

Although malignant transformation is possible, there are several contrasts between lymphomas and pure AILD. Clinically, rarely do non-AILD-type lymphomas consistently display the generalized lymphadenopathy, hepatosplenomegaly, and constitutional symptoms which virtually define AILD. Histologically, lymphomas, with scant vasculature, have monomorphic cellularity and atypia which are features not found in AILD. Another difference are the remnant germinal centers that persist in AILD despite intense cellular proliferation.

Histologically similar, differentiating AILD from reactive processes like infections, such as infectious mononucleosis and postviral adenitis, or autoimmune disorders are important. Infections can coexist with AILD, but nodal biopsy will differentiate the two. Atypical clear cells are present in AIL-TCL, not infections.

Early AILD may have well-preserved germinal centers which may be hard to distinguish from reactive hyperplasia or Castleman's, making repeated biopsies useful. Molecular genetic analysis, with DNA hybridization, and immunophenotyping are the best techniques available for diagnosis.[13]

In many respects, GVHD is clinically identical to AILD. The generalized lymphadenopathy, hepatosplenomegaly, autoimmune hemolytic anemia, susceptibility to infection, and constitutional symptoms such as weight loss are all familiar to the GVHD picture. Skin and hepatic lesions, however, are not nearly as prominent in AILD and the history of organ transplant is noticably absent. Histologically, the immunoblast proliferation, the disappearance of follicular structures, eosinophilic deposits, and sometimes granulomatous lesions are all mutually common in the nodes and spleen of patients with both diseases. It is important to note, however, that GVHD pathogenesis is very similar to that of AILD and AILD may simply be an abnormal immune response with pharmaceutical and not tissue triggers.

Prognosis and Treatment

A stormy and unpredictable course is standard and, seemingly despite treatment modalities, a period of either rapid progression or remission occurs with fatality in months to years.[2,11,29] Death occurs in 75% of those affected with a median survival of 30 months.[30] About one third of patients respond to immunosuppressants.[13,31,32] The presence of clear cells, age of onset, type of pharmacotherapy, presence of clonality, and other factors have not been found to be good prognostic indicators for AILD.[15,33] Complete remission after steroid therapy, which occurs in up to 30%, best correlates with good outcome whereas progression to malignant lymphoma, which occur in 18-50%,[30,34] is associated with poor prognosis. Despite its "low-grade" revised Kiel classification, median survival is 16 months in malignant transformation,[23,32,35,36] with drug exposure, elevated lactate dehydrogenase, rash, and lymphocytopenia associated with more rapid progression.[30] Therapy is controversial and can be as conservative as support with steroids or as aggressive as multi-drug combination chemotherapy, utilized particularly in cases with

clonality.[10,17,37] Case reports of successful treatment of AIL-TCL by IFN-a, fludarabine, COPBLAM/IMVP-16, and 2-chlordeoxyadenosine have so far been anecdotal.[35,38-40] Infectious complications are the most common cause of fatality, especially pneumonia by CMV, *P. carinii*, and Aspergillus.[13,30,35] TMP-SMX prophylactus may be considered.

Conclusion

In 70-95%, there is evidence of clonality even in early forms of AILD, mostly in the T-cell recepter (TCR) gene.[15,24,35,41] IgH rearrangement is also present in 10% of cases.[15] Serial biopsies have shown either reduction in clones or malignant transformation.[14,23,27] Researchers theorize that the initially benign hyperplasia may simply promote clones with genetic rearrangements due to the numerous rapidly repeating cell divisions.[23] Clones, however, are not present in amounts appreciable by Southern blot assay in other forms of hyperplasia.[23] Immunosuppression in AILD may account for this difference as T-cell deficiency in regulation is known to result in B-cell proliferation and autoaggression.[5,42] The worst prognosis is for those with complex uberrant clones and chromosome 1p structural defects, which is also found in other cancers.[36]

Allergies and drugs such as aspirin, phenytoin, halothane, L-dopa, and antibiotics such as penicillins, tetracycline, and the sulfonamides have been associated previous to onset of AILD.[35,37] A review of the literature has failed to find reports of AILD following macrolide exposure. In our case report, we present a relatively healthy woman of typical age for the onset of the disorder with allergic rhinitis and history of various drug hypersensitivities.

While statistical correlation points to the strong possibility that pharmaceutical exposure may be a risk factor for subsequent development of AILD, the pathophysiologic theory of causation may be more obscure. Some evidence suggests that certain B-cell aberrations are a result of drug hypersensitivity.[4] It is difficult to say whether the drugs are simply coincidently associated or actually cause, maintain, or exacerbate clonality in AILD and if drug exposure causes AILD to be more likely to progress to frank lymphoma. Only continuing research will bring light to this query.

Figure 1.–Prominent blood vessel with extravasated blood in background of proliferation lymphosytic.

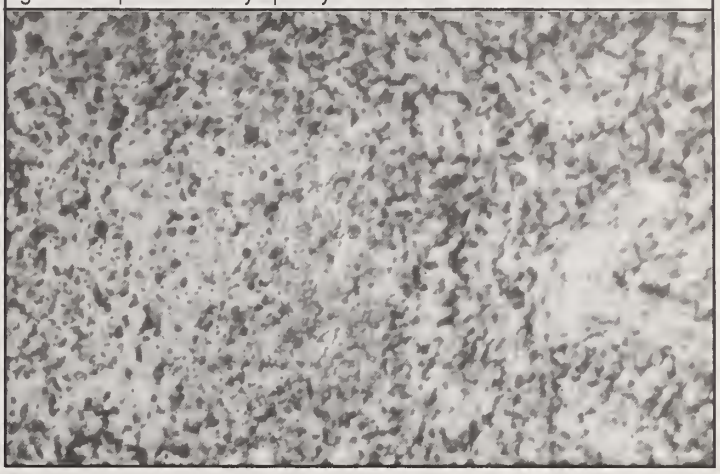
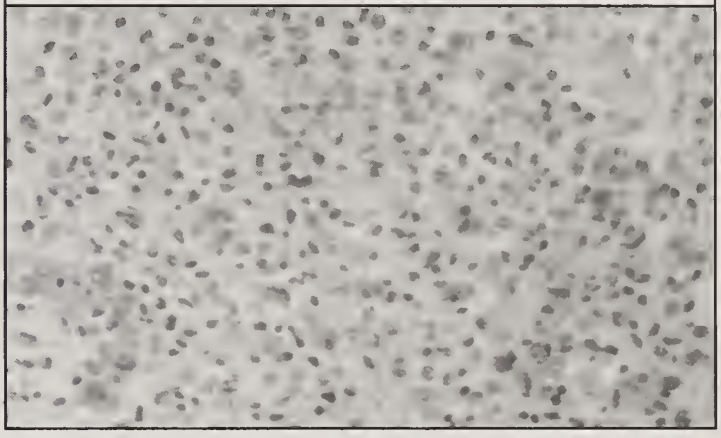


Figure 2.– High power of endothelial proliferation within lymphoma characteristic of AILD-like T-Cell lymphoma.



Acknowledgements

Kuakini Medical Center - Department of Medicine and Pathology,
John M. Hardman MD, and Georgette Ulloa

References

1. Flandrin G, Daniel MT, El Yafi G, Chelloul N: Diffuse plasmacytic sarcomatoses. Actual hemat 1972; 6:25.
2. Westerhausen M, Oehlert W: Chronic pluripotential immunoproliferative syndrome. Dt med Wschr 1972; 97:1407.
3. Frizzera G, Moran EM, Rappaport H: Angioimmunoblastic lymphadenopathy with dysproteinemia. Lancet 1974; I:1070-1073.
4. Lukes RJ, Tindle BH: Immunoblastic lymphadenopathy: A prelymphomatous state of immunoblastic sarcoma.Workshop on Classification of Non-Hodgkin's Lymphomas. Univ of Chicago, IL, June 25-29, 1973
5. Knecht H: Angioimmunoblastic lymphadenopathy: Ten years' experience and state of current knowledge. Semin Hematol 1989; 26:208-215.
6. Lapes MJ, Vivaequa RJ, Antoniades K: Immunoblastic lymphadenopathy associated with phenytoin. Lancet 1976; 1:198.
7. Weisenburger DD: Immunoblastic lymphadenopathy associated with methydopa therapy: a case report. Cancer 1978; 42:2322-2327.
8. Antony AC: Allergen-associated angioimmunoblastic lymphadenopathy. Lancet 1979; 1:978
9. Lukes RJ, Tindle BH: Immunoblastic lymphadenopathy: A hyperimmune entity resembling Hodgkin's disease. NEJM 1975; 292:1-8
10. Frizzera G, Moran EM, Rappaport H: Angioimmunoblastic lymphadenopathy: Diagnosis and clinical course. Am J Med 1975; 59:803-818.
11. Flandrin G: Angioimmunoblastic lymphadenopathy: clinical, biologic and follow-up study of 14 cases. Recent Results Cancer Res 1978; 64:247-262.
12. Knecht H, Schwarze EW, Lennert K: Histological, immunohistological and autopsy findings in lymphogranulomatosis X. Virchows Arch 1985; A406:105-124
13. Ganesan TS, Dhaliwal HS, Dorreen MS, et al: Angioimmunoblastic lymphadenopathy: A clinical, immunological and molecular study. Br J Cancer 1987; 55:437-442.
14. Freter CE, Cossman J: Angioimmunoblastic lymphadenopathy with dysproteinemia. Semin Oncol 1993; 20:627-635.
15. Weiss LM, Strickler JG, Dorfman RF, Horning SJ, Warnke RA, Sklar J: Clonal T-cell populations in angioimmunoblastic lymphadenopathy and angioimmunoblastic lymphadenopathy-like lymphoma. Am J Pathol 1986; 122: 392-397.
16. Pangalis GA, Moran EM, Rappaport H: Blood and bone marrow findings in angioimmunoblastic lymphadenopathy. Blood 1978; 51:71-83
17. Sallah S, Gagnon G: Angioimmunoblastic Lymphadenopathy with Dysproteinemia: Emphasis on Pathogenesis and Treatment. Acta Haematol 1998; 99:57-64.
18. Harris NL, Jaffe ES, Stein H et al: A revised European-American classification of lymphoid neoplasms: A proposal from the International Lymphoma Study Group. Blood 1994; 84(5):1361-1392.
19. Jaffe ES: Angioimmunoblastic T-cell lymphoma: New insights, but the clinical challenge remains. Ann Oncol 1995; 6:631-632.
20. Lennert K, Feller A: Histopathology of non-Hodgkin's Lymphoma ed. 2. New York: Springer-Verlag; c1992
21. Shimoyama M, Minato K, Saito H, Takenaka T, Watanabe S, Nagatani T, Naruto M: Immunoblastic lymphadenopathy (IBL)-like T-cell lymphoma. Jpn J Clin Oncol 1979, 9(s):347-356.
22. Nathwani BN, Winberg CD, Bearman RM: Angioimmunoblastic lymphadenopathy with dysproteinemia and its progression to malignant lymphoma, Surgical Pathology of Lymph Nodes and Related Organs. Edited by ES Jaffe. Philidelphia, WB Saunders, 1985:57-85.
23. Lipford EH, Smith HR, Pittaluga S, Jaffe ES, Steinburg AD, Cossman J: Clonality of angioimmunoblastic lymphadenopathy and implications for its evolution to malignant lymhoma. J Clin Invest 1987; 79:637-642.

continued on p.56

Postural Hypertension in Elderly Men- The Honolulu Heart Program

Kannayiram Alagiakrishnan MD*, Kamel Masaki MD**, Irwin Schatz MD***,
J. David Curb MD, MPH****, Patricia Blanchette MD, MPH*****

Abstract

Postural hypertension is a condition in which the blood pressure rises abnormally during standing. The aim of this study is to determine the prevalence of postural hypertension and its association with morbidity and subsequent mortality.At the fourth examination (1991-1993) of the Honolulu Heart Program longitudinal cohort, 3741 Japanese-American men aged 71-93 were examined. Prevalence of postural hypertension in this cohort was 39%. Although there was a high prevalence of postural hypertension in this cohort, its clinical significance is questionable as there were no significant correlations with morbidity and subsequent mortality.

Introduction

Postural hypertension or orthostatic hypertension is a condition in which the blood pressure rises during standing. There are only a few case reports and studies documenting this condition and it is not well recognized. The definition of orthostatic hypertension is not yet standardized. One study defines it as an increase in diastolic blood pressure from below 90 to above 90 mm Hg on standing.[1] Another study defines it as an increase in systolic blood pressure by 10 mm Hg or more by the tilt test,[2] and another by marked hypertension in the upright position with normal pressure in the supine position.[3] Kozo et al define it as an elevation of systolic BP >20mm Hg at 2 minutes after standing.[4]

*Fellow in Geriatric Medicine, Geriatric Medicine Program, John A. Burns School of Medicine, University of Hawaii, Honolulu, Hawaii 96817.

**Assoc. Professor of Medicine, Geriatric Medicine Program, John A. Burns School of Medicine, University of Hawaii, Honolulu, Hawaii 96817.

***Professor of Medicine, John A. Burns School of Medicine, University of Hawaii, Honolulu, Hawaii 96817.

****Professor of Medicine and Epidemiology, Geriatric Medicine Program, John A. Burns School of Medicine, University of Hawaii, Honolulu, Hawaii 96817.

*****Professor of Medicine and Public Health, Division of Geriatric Medicine, John A. Burns School of Medicine, University of Hawaii, Honolulu, Hawaii 96817.

Correspondence to:
Kannayiram Alagiakrishnan MD
347 N. Kuakini Street, HPM 9th Floor,
Honolulu, Hawaii 96817
Phone: 808-523-8461
Fax: 808-528-1897
e-mail: kannayir@hawaii.edu

Postural hypertension was first reported by Schneider et al in 1922, in 4.2% of 2000 apparently healthy airmen examined after World War I.[5] The prevalence of postural hypertension varies. In one study, orthostatic hypertension was found in 71% (15 of 21 patients) of borderline hypertensives, while another study had a prevalence 8.7% (29 of 334).[4] Streeten et al showed that as many as 10% of some hypertensive populations may have orthostatic hypertension.[1]

Various mechanisms for postural hypertension have been suggested. One study showed that decreased venous return causes decreased cardiac output, increased sympathetic stimulation and excessive arteriolar constriction.[1] Other studies showed that patients have increased vascular adrenergic activity[6] and excessive increase in peripheral vascular resistance during tilting.[7,8] Therefore, the exact pathogenic mechanisms of postural hypertension are not clear, even though abnormalities of autonomic nervous system activity may be etiologically related.

Various studies have looked at the clinical significance of postural hypertension. One study demonstrated that neurobehavioral functioning and activities of daily living were significantly lowered in people with postural hypertension. Additionally, more periventricular hyperintensities or advanced leukoaraiosis were seen on MRI of the brain when compared with a normotensive group.[3] In another study, an association with extreme dipping (marked fall in nocturnal blood pressure) and cerebrovascular disease has been demonstrated.[2,9]

The aim of this analysis is to determine the prevalence of postural hypertension in elderly men of the Honolulu Heart Program longitudinal cohort and to study the association with morbidity and subsequent mortality.

Methods

Study Population

The Honolulu Heart Program is a longitudinal cohort study of cardiovascular disease which began in 1965. Participants were men of Japanese ancestry, living on the island of Oahu, Hawaii in 1965, and born between 1900 and 1919. The first examination was performed between 1965 –1968 and 8006 men were examined. The entire cohort has undergone 6 examinations so far. At the fourth examination (1991-1993), 3741 men aged 71-93 years were examined, representing 80% of the survivors. For this analysis, all variables of interest were available in 3522 participants. The study was approved by the institutional review board of Kuakini Medical Center, and procedures followed were in accordance with institutional guidelines.

Data Collection

The fourth examination included demographic questions, medical and psychosocial interview assessment of cognitive function, fasting blood and 2hour GTT, EKG, anthropometry, blood pressures (seated, ankle-arm ratio, orthostatics). Diabetes mellitus was defined by history (as told to the participant by a physician),or by fasting glucose ≥ 140 mg/dl or by 2 hour post prandial glucose ≥200 mg/dl. Body mass index (BMI) was calculated as weight (kg)/ height (square meter).

Morbidity and mortality surveillance by the monitoring of hospital discharge records and death certificates has been performed since the beginning of the study. For this report, mortality data were accumulated through December 1997. Data collection is believed to be essentially complete for all cause mortality. Attrition in this cohort is known to be very small; at the fourth examination, only 5 men were lost to follow-up.

Seated blood pressure was measured twice with a mercury sphygmomanometer using a standardized protocol. Supine measurements taken after at least 15 minutes of supine rest. Standing measurements were taken 3 minutes after standing.

Definition of Postural Hypertension

Normally on standing , there is a fall in systolic BP of 10 mm Hg and a rise in diastolic BP of 2-3 mm Hg.[10] Postural hypertension is a syndrome in which the blood pressure (systolic or diastolic) rises by 10 mm Hg or more on standing.

Statistical Methods

Subjects with postural hypotension were excluded. We compared subjects with and without postural hypertension. We studied cross sectional associations of postural hypertension with age , BMI, smoking status, seated hypertension, abnormal ankle brachial index, diabetes, prevalent CHD, CVA and cognitive impairment, and subsequent 6 year mortality.

Data are expressed as means ± standard deviation (SD) and as percentages .Univariate and multivariate logistic regression models were used to calculate Odds Ratios(OR) and 95% confidence interval (CI) to study cross-sectional associations. Cox proportional hazards models were used to study the association with subsequent 6 –year mortality.

Figure 1.— Prevalence of postural hypertension by 5-year age groups in the Honolulu Heart Program Cohort (n-3522). Chi square p-0.522.

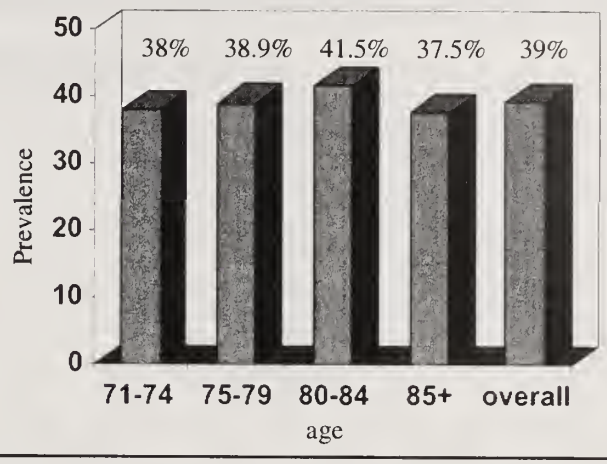


Table 1.— Baseline characteristics of variables by Postural Hypertension Status

Variables	Postural Htn Present	Postural Htn Absent
Age (years)	77.6 (+4.4)	77.5 (+4.5)
BMI*	23.4 (+3.1)	23.7 (+3.2)
Smoking Status	7.41%	7.60%
Seated Htn.*	76.84%	73%
Abnormal ABI	11.89%	13.20%
Prevalent Diab.	28.17%	28.10%
Prevalent CHD	17.45%	15.90%
Prevalent CVA	5.24%	4.50%
Cognitive Imp.	12.28%	12.40%

Continuous Variables- Means (± SD), t tests
Categorical Variables-Percentages, chi square analysis
*p < 0.05
Htn.= Hypertension
Diab.= Diabetes

Results

Prevalence of postural hypertension in this cohort was 39%. Prevalence of postural hypertension was 38% between 71-74 years of age, 38.9% between 75-79 years of age, 41.5% between 80-84 of age, and 37.5%in persons over 85 years of age.(Fig.1). There was no significant difference in prevalence rates between the 5 year age groups (chi square p= 0.522). The baseline characteristics of variables by postural hypertension status are shown in Table1. There was a significant difference in prevalence of seated hypertension, 76.8% of those with postural hypertension had seated hypertension compared to 73% in those without postural hypertension. BMI is also significantly associated with postural hypertension. There were no significant differences among those with and without postural hypertension among variables like age, smoking status, abnormal ankle- brachial index (ABI), prevalent diabetes, prevalent CHD, prevalent CVA, and cognitive impairment.

Univariate logistic regression models showed that postural hypertension was significantly associated with seated hypertension (OR 1.23, 95% CI 1.04-1.45) and BMI (OR 1.03, 95%CI 1.002-1.05). There were no significant associations with age, prevalent coronary artery disease, stroke, cognitive impairment, diabetes, abnormal ankle- brachial index and smoking status. (Table 2).

We performed multivariate logistic regression analysis (Table 3) with postural hypertension as a dependent variable and age, BMI and seated hypertension as independent variables. Postural hypertension was significantly associated with BMI (OR 1.025,95% CI 1.002-1.050) and seated hypertension (OR 1.192, 95% CI 1.011-1.405), but not with age.

Two separate Cox proportional hazards models were performed with 6 year all cause mortality as the end point (Table 4). Postural hypertension showed no significant association with 6 year all cause

mortality. In the first model, the relative risk (RR) for all cause mortality associated with orthostatic hypertension was 0.95 (95%CI 0.82- 1.10) after adjustment for age alone. Adjustment for other factors like seated hypertension and BMI (model 2) also did not appreciably alter the results (RR=0.97; 95%CI 0.83-1.12).

Table 2.– Univariate Logistic Regression Analysis, with Postural Hypertension as the dependent variable

Variables	Odds Ratio (95% CI)
BMI	1.030 (1.002-1.050)*
Smoking	1.018 (0.911-1.159)
Seated Hypertension	1.230 (1.040-1.450)*
Abnormal ABI	0.886 (0.716-1.048)
Prevalent Diabetes	0.995 (0.878-1.038)
Prevalent CHD	1.189 (0.859-1.646)
Previous CVA	1.189 (0.859-1.646)
Cognitive Impairment	0.986 (0.797-1.220)

* $p < 0.05$

Table 3.– Multivariate Logistic Regression Analysis, with Postural Hypertension as the dependent variable

Variables	Odds Ratio
Age	1.009 (0.993-1.026)
BMI	1.025 (1.002-1.050)*
Seated Hypertension	1.192 (1.011-1.405)*

* $p < 0.05$

Table 4.– Cox Proportional Hazards models for association between Postural Hypertension and 6-year all-cause mortality

Models	Relative Risk	95% CI
Model 1 (Postural hypertension adjusted for age)	0.95	0.82-1.10
Model 2 (Postural hypertension adjusted for age, seated hypertension, and BMI)	0.97	0.83-1.12

Discussion

Physiological mechanisms that ensure fairly small oscillations in blood pressure, with changes in posture are well known. Postural or orthostatic hypotension is commonly encountered and its physiology has been well characterised. The opposite, orthostatic or postural hypertension, has received scant attention and only few case reports and studies have been done.[1-4] Its clinical significance in the elderly population also remains unclear.

Orthostatic hypertension has not been well defined. Sapru et al defined orthostatic hypertension as marked hypertension in the upright position with normal pressures in the supine position.[3] Streeten et al defined orthostatic hypertension as an increase in diastolic BP from below 90 to above 90 mm of Hg.[1] Matsubayashi et al defined orthostatic hypertension as an elevation of SBP ≥20 mm Hg at 1 or 2 minutes after standing[4] and Kario et al defined it as an increase in systolic BP by 10 mm Hg by tilt test.[9] In our study we defined postural hypertension as change in SBP or DBP ≥10 mm Hg on standing after 3 minutes.

Our cross-sectional data showed that the prevalence of postural hypertension in this cohort is 39%. Postural hypertension is significantly associated with seated hypertension and BMI. There were no significant associations with other variables, prevalent diseases and 6 year all-cause mortality.

There are several strengths to this study. It is population- based, and the numbers are large. It is the only large study done in an elderly population, with almost complete follow-up for morbidity and mortality outcomes.

There are some limitations to this study. Seated blood pressure was measured only twice and not multiple times. Orthostatic blood pressure was measured once. Since blood pressure values are known to vary with repeated measurements multiple measures would be preferable. Secondly, morbidity associations that were studied were cross-sectional . Thirdly, there are no data on cause specific mortality in this analysis. Lastly data reported here can only be generalized to an ambulatory male population, since there were no women in the cohort and orthostatics were not measured at home visits or nursing home visits.

In conclusion , even though there is a high prevalence of postural hypertension in this population of elderly Japanese-American men, its clinical significance is questionable as there were no significant correlations with morbidity and subsequent mortality.

Acknowledgement

We would like to thank Ms. Kim Siu for her assistance in preparing the manuscript.

References

1. Streeten DHP, Auchincloss Jr JH, Anderson GH, Richardson RL, Thomas FD, Miller JW. Orthostatic Hypertension . Pathogenic Study. *Hypertension*, 1985; 7; 196-203.
2. Kario K, Eguchi K, Nakagawa Y, Motai K, Shimada K. Relationships between extreme dippers and orthostatic hypertension in elderly hypertensive patients. *Hypertension* 1998 ;31(part 1); 77-82.
3. Sarpu RP, Sleight P, Anand IS, Sambhi MP, Lopez R, Chuttani PN. Orthostatic Hypertension. *Am. J. Med* 1979; 66; 177-182.
4. Matsubayashi K, Okumiya K, Wada T, Osaki Y et al. Postural dysregulation in systolic blood pressure in associated with worsened scoring on neurobehavioral function tests and leukoaraiosis in the older elderly living in a community. *Stroke* 1997; 28; 2169-2173.
5. Schneider EC, Trusdell D. A statistical study of the pulse rate and the arterial blood pressures in recumbency, standing and after standard exercise. *Am J. Physiol* 1922; 61; 429-474.
6. Hull DH, Woethuis RA, Cortese T, Longo MR Jr, Treibwasser JH. Borderline hypertension versus normotension; Differential response to orthostatic stress. *Am Heart J* 1977; 94; 414-420.
7. Benowitz ML, Zevin S, Carlsen S, Wright J, Schambela NM, Cheitlin M. Orthostatic Hypertension due to vascular adrenergic hypersensitivity. *Hypertension* 1996; 28; 42-46.
8. Frolich ED, Tarazi RC, Ulrych M, Dustan HP, Page IH. Tilt test for investigating a neural component in Hypertension: Its correlation with clinical characteristics. *Circulation* 1967; 36; 387-393.
9. Kario K, Motai K, Mitsuhashi T et al. Autonomic nervous system dysfunction in elderly hypertensive patients with abnormal diurnal blood pressure variation and relation to silent cerebrovascular disease. *Hypertension* 1997; 30; 1504 –12
10. Lipsitz LA. Orthostatic Hypertension in the elderly. *NEJM*, Oct.5,1987,952-57

Evaluation of Late Onset Bipolar Illness During Menopause

Takako Vivian Ishimaru-Tseng MD

Abstract

Objective: *The purpose of this paper is to review the literature on bipolar illness and to discuss its relevance to the evaluation and treatment of bipolar illness during menopause. The hypothesis is that there is a group of patients who may present with commonly reported symptoms of menopause who are in fact, suffering from an underlying bipolar illness.*

Method: *The literature pertaining to gender differences in bipolar illness as well as the effect of major life events associated with the onset of bipolar illness is closely examined.*

Results: *There is enough evidence to support the hypothesis that women in particular are vulnerable to bipolar illness of the rapid cycling type. Exacerbations of a previous existing condition or late-onset bipolar illness may be associated with major stressors and life events such as that experienced during menopause.*

Conclusions: *Gender differences in the course of bipolar illness and the greater prevalence of rapid cycling among bipolar women may in fact be a major consideration in the evaluation and treatment of symptoms during menopause.*

Introduction

Although gender differences in the evaluation and treatment of bipolar illness have been recognized, the impact of this illness on the experience of menopause is a topic that has yet to be explored. Commonly reported symptoms of menopause including irritability, sleep disturbances, and mood changes may in fact, be complicated or worsened by an underlying bipolar disorder. Another consideration is the possibility that there are women who are suffering from the first episode of a late onset bipolar illness. In light of the fact that 40% of the U.S. population is expected to be 45 years and older by the year 2010, this appears to be an area of research that warrants further examination for its clinical relevance.[1]

Correspondence to:
Takako Vivian Ishimaru-Tseng MD
University of Hawaii Residency Program
Department of Psychiatry
1356 Lusitana Street 4th Floor
Honolulu, Hawaii 96813

Table 1.– Type I bipolar disorder (history of at least one manic episode)
From DSM-IV, American Psychiatric Association, 1994 p.332 [29]

-Criteria for manic episode:

-Distinct period of abnormally and persistently elevated, expansive, or irritable mood, lasting at least 1 week (can be less than 1 week if hospitalization required).

-At least three of the following symptoms (four if mood can only be described as irritable):

Grandiosity
Decreased need for sleep
Pressure of speech or more talkative than usual
Racing thoughts or flight of ideas
Highly distractable
Psychomotor agitation or increase in goal-directed activity
Excessive involvement in pleasurable activities with a high potential for painful consequences

-Mood disturbance severe enough to cause marked impairment in social or occupational functioning. Psychotic features may also be included in this category.

Table 2.– Type II bipolar disorder (recurrent major depressive episodes with hypomanic episodes)
From DSM-IV, American Psychiatric Association, 1994 p.338 [29]

Criteria for hypomania:

-A distinct period of persistently elevated, expansive, or irritable mood lasting at least 4 days.

-During the period of mood disturbance, at least three (four if the mood is only irritable) symptoms of mania have been present to a significant degree.

-The episode is not severe enough to cause a marked impairment in social or occupational functioning. No psychotic features. Hospitalization not necessary to keep the patient safe from self or others.

Review of literature

According to the literature the median age of onset of bipolar disorder in women living in the United States is 34.5 years.[2] The peak incidences, however, occur at ages 20-30 and 40-50 years. The latter peak clearly coincides with the age at which most women in the United States are in menopause. Leibenluft suggests that women may be more likely to experience the onset of bipolar illness at ages 45-49 years.[3]

Currently, the Diagnostic and Statistical Manual of Mental Disorders DSM-IV acknowledges the existence of various subtypes of bipolar illness. The description of the classic type I manic-depressive is the one with which most clinicians are familiar (Table 1). The type II bipolar patient, on the other hand, may present with more subtle clinical features, as they do not present with full blown manic symptoms, but rather attenuated symptoms that are described as hypomania (Table 2). Unfortunately, this latter group can be difficult to identify and to treat, thus often becoming labeled as having borderline personality traits. Symptoms that may lend themselves to this diagnosis include rapid shifts in mood that are attributed to affective instability, intense displays of anger or irritability, impulsivity, recurrent threats of self harm or suicide, and major disruptions in interpersonal relationships.

Bipolar illness can be further classified according to the frequency with which the episodes of depression are intercalated with mania or hypomania. A rapid cycling bipolar illness is defined as the presence of at least four episodes of a mood disturbance in the previous 12 months that meet the criteria for a major depressive, manic, mixed, or hypomanic episode. A mixed episode refers to a mood disturbance that meets the criteria for both a manic episode and a major depressive episode.

Most of the research on gender differences in bipolar illness has focused upon reproductive factors associated with pregnancy and the postpartum period. Out of two studies that included menopause as part of the evaluation of bipolar illness, one group of authors, Kukopulos et al.[4] found that about a third of the bipolar women in their study became what was described as "continuous circular" bipolars around the period of menopause. Wehr et al.,[5] however, noted no effect of menopause in bipolar patients who had already been identified as rapid cyclers. What remains to be explored is whether there is a group of women who experience the first episode of a late onset bipolar illness during menopause.

In making an assessment of the factors that lend themselves to the etiology of a late onset bipolar illness, it becomes clear that genetic and biological components alone are not adequate in explaining the heterogeneity observed in the expression of this disorder. In one study conducted by Ellicott et al.[6] it was found that there is a significant association between life events and the relapse or recurrence of bipolar illness. Not only was it reported that bipolar individuals experience increased stress before the onset of their illness, but also prior to subsequent episodes. In another study, Glassner et al.[7] observed that life events appear to play a greater etiological role in late onset bipolar disorder. A treatment plan that attempts to identify and ameliorate potential life stressors may be very important in reducing the likelihood of relapse in bipolar patients. In some cases, it may even prevent or at least delay the onset of bipolar illness during the perimenopausal years.

Although some may argue that menopause is not necessarily experienced by all women as a stressful live event, it is important to keep in mind that the women who present for the treatment of menopausal symptoms are usually in a measurable amount of distress. As of yet, a clear cut syndrome of an affective disorder associated with menopause has not been identified with consistency. However, there appears to be a general consensus in the literature documenting an increase in somatic, mood, and behavioral symptoms.[8] Studies have shown that women in menopause clinics are reported to have elevated symptoms of depression and a reduced quality of life.[9] According to Harlow et al.,[10] there may actually be a link to medically treated depression and early menopause. This in itself can be an important consideration in the primary care setting where clinicians can initiate appropriate intervention strategies early in the course of a woman's reproductive history.

Differential diagnosis

Assessing older patients for bipolar illness can present with some difficulties that complicate the clinical picture. Unlike the classic presentation of an agitated, full-blown manic patient with pressure of speech and grandiose delusions, older patients are more likely to present with signs of a mixed episode in which symptoms of both depression and mania are present.[11] In a study by Schulman et al.[12] it was reported that less than 10% of a group of elderly bipolar patients were found to have had their first manic attack before the age of 40. Without a thorough diagnostic evaluation, many older patients may be incorrectly diagnosed as having an agitated depression, a schizoaffective disorder, or borderline personality traits with somatic preoccupation. The danger in this is that these patients may be at increased risk for rapid cycling and worsening of irritability, especially if antidepressant therapy is initiated without a mood stabilizer.[13]

Considering the statistics that indicate that rapid cycling bipolar disorder is three times more common in women than in men,[14] the issue of appropriate mood stabilization and follow-up treatment becomes even more critical in the primary care setting. Not only are these women more likely to present themselves initially to internists and gynecologists during the reproductive years, but also, the likelihood in the recurrence of symptoms in subsequent years is well documented.[3,15]

Clinical course

In order to carefully assess the clinical presentation with accuracy, one must always obtain a detailed history and a description of the clinical course of the menopausal woman's symptoms. Signs and symptoms associated with menopause tend to develop insidiously and are believed to be linked to a gradual decline in hormone activity. Mood disturbances and irritability that last for at least a week and continue to escalate are suggestive of an affective disorder rather than a worsening of severe menopausal symptoms. A thorough medical work-up to exclude general medical conditions such as thyroid abnormalities can be especially helpful. Several studies in the literature have demonstrated that rapid cycling patients can be successfully treated with high doses of levothyroxine.[16,17] Other considerations in the differential diagnosis also include substance abuse and drug interactions, especially if a woman is on oral contraceptives, hormone replacement therapy, or antidepressants that can alter the pharmacokinetics of drug metabolism.[18]

Facilitation of diagnosis

Sleep disturbances are common during menopause.[19] Hot flashes which are believed to be a symptom of vasomotor instability are especially disruptive to the sleep cycle. Not only does a lack of sleep cause fatigue, but it also has a profound effect on mood, memory, and concentration as measured by cognitive performance tasks, probed memory examinations, and electrodermal-orienting responses

to assess attentional shift or capture.[20,21,22] Sleep deprivation in itself has been known to trigger manic episodes in some bipolar patients.[23] The psychological ramifications of hot flashes has also been noted by Ginsberg[24] and Baker et al.[25] in the literature. Once again, a detailed history will reveal clues as to whether there is an underlying mood disorder, or whether it is a symptom that might be ameliorated by hormone replacement therapy.

A patient who reports a sudden decrease in sleep along with an increase in goal-directed activity and irritability is more likely to be suffering from a bipolar disorder than a woman who finds herself feeling constantly fatigued and low in energy because of sleep disturbances related to hot flashes. The difficulty arises, however, when bipolar patients with mixed features present with a combination of symptoms that include lack of sleep, irritability, fatigue, and possibly an increase in goal-directed activities. At this point, it becomes especially critical to evaluate the patient for other supporting evidence such as racing thoughts, grandiosity, excessive involvement in pleasurable activities with a high potential for painful consequences, significant changes in weight, or suicidal ideation, none of which are considered to be a normal part of menopause. When there is a suspicion that an underlying psychiatric illness is present, it is important to ask the patients directly about these symptoms as they usually will not volunteer this information on a routine visit to their primary health care provider.

Treatment

Pharmacological intervention continues to be the mainstay of treatment for bipolar illness. For this reason, an accurate diagnosis and initiation of treatment is critical. In contrast to earlier reports that had suggested that perhaps interruptions in lithium maintenance therapy could lead to a refractory response in previously treated patients,[26] Tondo et al.[27] has shown that in fact, lithium treatment can successfully be restarted if there is a prior history of a positive response. Of particular concern are the cases of bipolar illness that are untreated. Not only can the illness recur more frequently, but it is also known to progress rapidly over time. A phenomenon known as the kindling hypothesis of affective disorders suggests that perhaps with repeated episodes of illness, it may be possible that subsequent episodes increase in frequency and intensity. A study by Cutler et al.[28] revealed that untreated patients with severe symptoms of bipolar illness had a tendency to have more rapid recurrences as the history of the illness progressed.

Conclusions

The evidence in the literature suggests that gender differences in the course of bipolar illness and the greater prevalence of rapid cycling among bipolar women may in fact be a major consideration in the evaluation and treatment of commonly related symptoms during menopause. Although most women undergoing menopause are not likely to be suffering from a major affective disorder requiring intensive psychiatric treatment, those who may have a subclinical psychiatric illness or have a genetic vulnerability to experience a reproductively related affective disorder may find that menopause is the first time that their psychiatric condition is recognized. This could be partly due to a combination of psychosocial stressors that make themselves apparent during the time of menopause, but also, to biological factors such as decreased sleep that may trigger the onset of a bipolar illness in susceptible individuals. An accurate diagnosis not only ensures the implementation of an appropriate treatment plan for the patient, but it is also the quickest and most cost-efficient mechanism by which we can alleviate the suffering for which we, as medical health providers, are called upon.

References

1. U.S. Bureau of the Census. Resident population of the United States: Middle Series Projections, 2006-2010 by age and sex, March 1996
2. Kaplan H, Sadock B.Comprehensive Textbook of Psychiatry V. Baltimore: Williams &Wilkins, 1989:892-913
3. Leibenluft E. Women with bipolar illness: Clinical and research issues. *Am J Psychiatry* 1996;153:163-173
4. Kukopulos A, Reginaldi D, Laddomada G, Floris G, Serra G, Tondo L. Course of the manic-depressive cycle and changes caused by treatment. *Pharmakopsychiatr Neuropsychopharmakol* 1980;13:156-167
5. Wehr TA, Sack DA, Rosenthal NE, Cowdry RW. Rapid cycling affective disorder: Contributing factors and treatment responses in 51 patients. *Am J Psychiatry* 1988;145:179-184
6. Ellicott A, Hammen C, Gitlin M, Brown G, Jamison K. Life events and the course of bipolar disorder. *Am J Psychiatry* 1990;147:1194-1198
7. Glassner B, Haldipur CV. Life events and early and late onset of bipolar disorder. *Am J Psychiatry* 1983;140:215-217
8. Stone A, Pearlstein T. Evaluation and treatment of changes in mood, sleep , and sexual functioning associated with menopause. *Obstet Gynecol Clin North Am* 1994;21(2):391- 403
9. Pearlstein T, Rosen K, Stone A. Mood disorders and menopause. *Endocrinol Metab Clin North Am* 1997;26(2):279-294
10. Harlow B, Cramer D, Annis K. Association of medically treated depression and age at natural menopause. *Am J Epidemiol* 1995;141:1170-1176
11. Mc Donald W, Nemeroff C. Practical guidelines for diagnosing and treating mania and bipolar disorder in the elderly. *Medscape Mental Health* 1998;3(2)
12. Schulman K, Post F. Bipolar affective disorder in old age. *Br J Psychiatry* 1980;136:26-32
13. Akiskal H. The prevalent clinical spectrum of bipolar disorders: Beyond DSM-IV. *J Clin Psychopharmacol* 1996 Apr;16(2 suppl 1):4S-14S
14. Leibenluft E. Issues in the treatment of women with bipolar illness. *J Clin Psychiatry* 1997;58(suppl 15):5-11
15. Stewart D, Boydell K. Psychologic distress during menopause: Associations across the reproductive life cycle. *Int J Psychiatry Med* 1993;23(2):157-162
16. Bauer M, Whybrow P. Rapid cycling bipolar affective disorder, II: Treatment of refractory rapid cycling with high-dose levothyroxine: a preliminary study. Arch Gen Psychiatry 1990;47:435-440
17. Stancer H, Persad E. Treatment of intractable rapid-cycling manic-depressive disorder with levothyroxine: Clinical observations. *Arch Gen Psychiatry* 1982;39:311-312
18. Pajer K. New strategies in the treatment of depression in women. *J Clin Psychiatry* 1995;56(suppl 2):30-37
19. Stone A, Pearlstein T. Evaluation and treatment of changes in mood, sleep, and sexual functioning associated with menopause. *Obstet Gynecol Clin North Am* 1994;21(2):391-403
20. Pilcher J, Huffcutt A. Effects of sleep deprivation on performance: A meta-analysis. *Sleep* 1996;19(4):318-326
21. Dinges D, Pack F, Williams K, Gillen K, Powell J, Ott G, Aptowicz C, Pack A. Cumulative Sleepiness, mood disturbance, and psychomotor vigilance performance decrements during a week of sleep restricted to 4-5 hours per night. *Sleep* 1997;20(4):267-277
22. Mc Carthy M, Waters W. Decreased attentional responsivity during sleep deprivation: Orienting response latency, amplitude, and habituation. *Sleep* 1997;20(2):115-123
23. Barbini B, Bertelli S, Colombo C, Smeraldi E. Sleep loss, a possible factor in augmenting manic episode. *Psychiatry Res* 1996;65(2):121-125
24. Ginsberg E. Hot flashes- physiology, hormonal therapy, and alternative therapies. *Obstet Gynecol Clin North Am* 1994;21(2):381-390
25. Baker A, Simpson S, Dawson D. Sleep disruption and mood changes associated with menopause. *J Psychosom Res* 1997;43(4):359-369
26. Maj M, Pirozzi R, Magliano L. Nonresponse to reinstituted lithium prophylaxis in previously responsive bipolar patients: Prevalence and predictors. *Am J Psychiatry* 1995;152:1810-1811.
27. Tondo L, Baldessarini J, Floris G, Rudas N. Effectiveness of restarting lithium treatment after its discontinuation in bipolar I and bipolar II disorders. *Am J Psychiatry* 1997;154:548-550
28. Cutler N, Post R. Life course in untreated manic-depressive patients. *Compr Psychiatry* 1982;23:101-115
29. American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition. Washington, DC, *American Psychiatric Association*, 1994; 332, 338



Coronary Artery Bypass Grafting Performed With Or Without A Bypass Pump: Early Results

Jeffrey D. Lee MD, Collin R. Dang MD, Sharyl Taoka (Medical Student IV),
B. Jason Bowles MD, and E. William Johnson MPH

Abstract

Introduction: *Traditionally, heart bypass surgery has required stopping of the heart and the use of cardiopulmonary bypass. Numerous complications have been associated with exposure to this extracorporeal circuit. Newer techniques of local cardiac wall stabilization now enable this operation to be performed safely "Off Pump". The early clinical results of Off Pump Coronary Artery Bypass (OPCAB) will be compared to a similar group of traditional Coronary Artery Bypass Grafting (CABG) patients.*

Methods: *A retrospective review of 137 consecutive patients undergoing elective coronary artery bypass grafting was performed, 68 of who underwent traditional CABG and 69 of who underwent OPCAB. Inclusion criteria consisted of first time cardiac surgical procedures with an ejection fraction ≥ 20%, without significant renal failure (creatinine < 2.0).*

Results: *There was no statistical difference in the age, sex, cardiac function or underlying co-morbidities between those undergoing CABG and OPCAB. CABG patients had slightly more vessels bypassed than those in the OPCAB group (3.0 vs 2.6, p=0.010). Despite similar preoperative characteristics, the OPCAB group experienced a reduction in morbidity without an increase in mortality.*

Conclusion: *In similar patient populations, OPCAB was associated with significantly reduced transfusion requirements, intubation time, ICU and overall hospital lengths of stay, with no increase in mortality. Further investigation is warranted to ascertain the role of the OPCAB in the general cardiac surgical community.*

Table1

	OPCAB (n=69)	CABG (n=68)	p- value
Transfusion required	29.0%	45.6%	0.045
Intubation time (hrs)	3.3 ± 7.3	9.5 ± 8.1	< 0.001
ICU LOS (days)	1.5 ± 1.0	2.4 ± 3.1	0.027
Hospital LOS (days)	4.9 ± 2.2	6.6 ± 4.2	0.005
CVA	0 (0%)	2 (3%)	0.150
Death	0 (0%)	2 (3%)	0.150

This study was supported by a grant from the Hawaii Community Foundation (grant #961573) and the Pacific Health Research Institute.

correspondence to:
Jeffrey D. Lee MD
1329 Lusitana Street, Suite 709
Honolulu, Hawaii 96813
Tel (808) 531-3311
Fax (808) 550-0279

Introduction

With our aging population, ischemic coronary disease is becoming an increasingly prominent health care problem. Over 800,000 coronary artery bypass grafting operations (CABG) are performed annually worldwide. Traditionally, CABG is performed with cardiopulmonary bypass (CPB) and global cardiac arrest to create a still and bloodless operative field. CPB however, can be associated with significant morbidity and mortality.

Multiple organ systems are deleteriously affected by the systemic inflammatory response, which ensues following exposure of the body to CPB. Organs involved include the heart, lungs, central nervous system, kidneys and gastrointestinal tract.[1] Cardiac damage has been attributed to activated neutrophils, oxygen free radicals and cytotoxins that cause myocardial edema and decreased contractility. Pulmonary dysfunction has been attributed to the degradation of surfactant, activation of complement and neutrophils, and consequent increased capillary permeability, interstitial edema, atelectasis, and decreased compliance. Neurologic complications such as stroke and neurocognitive dysfunction may be related to cerebral microemboli, associated with CPB, aortic cannulation, or surgical manipulation of the aorta. In one prospective multi-institutional study of 2108 patients undergoing CABG with CPB, stroke was seen in 3% overall.[2] Risk factors for a stroke following CABG with CPB included older age (> 70 years old = 6.1% stroke rate), history of a prior stroke (10.1 % stroke rate), uncontrolled systolic hypertension (11.0% stroke rate), and chronic obstructive pulmonary disease (6.1% stroke rate). In another prospective trial, neurocognitive dysfunction, which is defined as deterioration in intellectual functioning, confusion, agitation, disorientation, or memory deficit, was seen in 73% of patients following CABG with CPB tested at 8 days postop. Follow-up testing showed initial improvement at 2 months (38% had deficit) that seemed to plateau at one year (35% had deficit).[3,4]

Interest in minimizing the trauma of heart surgery has spurred investigation into less invasive approaches. The Off Pump Coronary Artery Bypass (OPCAB) utilizes new techniques of local cardiac wall stabilization, which allow accurate suture placement on the beating heart. All coronary vessels are approachable with this

operation and the OPCAB completely avoids the need to place the body on CPB. We will examine the early clinical experience with this new procedure.

Methods

A retrospective review of consecutive patients undergoing elective coronary artery bypass grafting was performed. Inclusion criteria were first time cardiac surgical procedures with ejection fractions ≥ 20%, without significant renal dysfunction (creatinine < 2.0). In order to compare patient populations undergoing a similar number of bypass grafts, all traditional CABG patients who underwent ≤ 3 grafts from January 1998 through May 1999 were included. Patient accrual was from May 1998 through May 1999 (OPCAB), and January 1998 through May 1999 (CABG). These procedures were performed at the St. Francis Medical Center at Liliha, Queens Medical Center, and Kuakini Medical Centers, all located in Honolulu, Hawaii. Informed clinical consent was obtained in all cases. Statistical analysis was performed using SPSS statistical software. Paired t tests were utilized. Differences at the 95% confidence level were considered to be statistically significant.

Results

69 OPCAB and 68 CABG patients were compared. There was no statistical difference in the age (OPCAB 64.8 years, CABG 66.0 years), sex distribution (OPCAB 73% male, CABG 76% male), estimated ejection fraction (OPCAB 55.5% vs CABG 50.9%) or underlying co-morbidities between those undergoing OPCAB and CABG. CABG patients had slightly more vessels bypassed than those in the OPCAB group (3.0 vs 2.6 p = 0.01). In this series, 10/68 (14.7%) CABG patients had more than 3 coronary vessels bypassed (4.4 ± .7 bypass grafts) whereas 11/69 (15.9%) in the OPCAB group had more than 3 bypasses performed (4.0 ± 0 bypass grafts). Despite these similar preoperative characteristics, the OPCAB group experienced reduced morbidity compared to those undergoing traditional CABG, with no increase in mortality. Intensive care unit and overall hospital lengths of stay were also reduced. (Table 1)

Discussion

Our early experience with the OPCAB has been encouraging. We have been subjectively impressed with the reduced trauma this operation seems to be associated with in selected patients. This study verifies our impression of a more favorable early clinical result with the OPCAB. The reductions in transfusion requirements, intubation time, ICU and overall hospital lengths of stay are tangible benefits both to the patient directly and to society in general, in terms of reduced medical expenditure and preservation of resources.

Of those patients undergoing traditional CABG, 45.6 % required postoperative blood and blood product transfusions. This compares favorably with the reported 75% transfusion rate in a group of 100 patients undergoing CABG with CPB at a major metropolitan medical center.[5] Unfortunately, this rate of blood and blood product transfusions are not uncommon after coronary bypass surgery and is attributed largely to the damaging effects of CPB on platelet function, and the coagulation cascade. The necessity for high dose heparinization as well as the hypothermia associated with traditional CABG with CPB, are contributing factors as well. In contrast, those patients undergoing the OPCAB are never subjected to the rigors of cardiopulmonary bypass. Platelets and clotting function are preserved. A lower dose of heparin is utilized and the patients are kept warm throughout the procedure. Accordingly, the reduction in transfusion requirements with the OPCAB procedure (29.0%) should not be surprising.

The damaging pulmonary effects of CPB can be profound. Pulmonary interstitial edema is common after CPB and requires vigorous diuresis and prolonged ventilation. Atelectasis and reduction in surfactant levels have been associated with CPB and the lack of ventilation of the lungs during a traditional CABG procedure. In contrast, the OPCAB patients are ventilated thoughout the entire procedure and are ready for extubation in many cases almost immediately. In this series, over 50% of the OPCAB patients were successfully extubated on the operating room table, at the end of the procedure.

A significant reduction in ICU and overall hospital lengths of stay was observed with the OPCAB. The earlier extubation in these patients, no doubt, speeds time to recovery and allows earlier ambulation and resumption of normal nutrition. The reduced pulmonary interstitial fluid allows these patients to wean off of oxygen more quickly, which can lead to a quicker recovery and discharge.

Neurologic sequelae of CABG with CPB can be one of the most feared complications of this procedure. Stroke can have devastating effects for the patient, family and society. It is associated with high in-hospital mortality rates (21% with stroke vs 2% without stroke), longer hospital stays (25 days with stroke vs 10 days without stroke), and higher rates of discharge to intermediate care or nursing home facilities (47% with stroke vs 8% without stroke).[2] Neurocognitive dysfunction is a more subtle neurologic deficit commonly seen after CABG with CPB. Development of these neurologic complications have been associated with cerebral microemboli, generated from a diseased atherosclerotic aorta, from the CPB pump circuit, or through surgical manipulation of the heart and aorta. These microemboli can be detected with use of Transcranial Doppler ultrasound probes placed over the bilateral middle cerebral arteries.[6] Since OPCAB avoids CPB entirely; cerebral microemboli may be reduced with reduced neurologic complications. Interestingly, in this series no strokes were observed in the OPCAB group whereas 2 documented clinical strokes (3%) were seen in the traditional CABG group, resulting in one of the two mortalities in this series. While not reaching statistical significance (p=0.150), this trend is supportive of a possible reduction in neurologic complications with the OPCAB.

Clearly there are significant limitations to this study. While consecutive, it is retrospective and subject to significant surgeon selection bias (i.e. perhaps only healthier patients may have had an OPCAB). We hoped to minimize this by using uniform inclusion criteria (elective patients, first time cardiac surgery, ejection fraction ≥ 20 %, no significant renal dysfunction with creatinine < 2.0). We tried to analyze patients with similar numbers of grafts as well. We were fairly successful in our efforts. No significant differences in age, sex or ejection fraction existed between the two groups. Slightly more grafts were performed in the traditional CABG group than in the OPCAB group (3.0 vs 2.6, p=0.01), however, a greater

percentage of OPCAB patients (15.9%) had greater than 3 grafts performed compared to the traditional CABG group (14.7%).

Graft patency is an obvious important endpoint not addressed in this study. Surgeon selection bias (i.e. perhaps only patients with relatively larger target coronary vessels underwent OPCAB) also limits useful analysis. We believe that only a properly performed prospective randomized trial can adequately answer this question. Early angiographic results by others however, have been reported. Jansen et al[7] in a favorable clinical report of their first 100 patients who underwent multivessel OPCAB documented an angiographic patency rate of 95%. Calafiore and colleagues in 190 consecutive patients and Subramanian in 52 consecutive patients have reported angiographic patency rates of 98.9%,[8] and 96.2%,[9] respectively.

Not all patients can undergo OPCAB. Anatomic and hemodynamic considerations play a role as well as the experience of the surgical team. In this series, 4 patients (5.5%) initially undergoing OPCAB were converted intraoperatively to a traditional CABG. In these patients, hemodynamic instability resulted from either lifting or stabilizing the heart, necessitating conversion. There were no myocardial infarctions or other significant complications in these patients. All were discharged home safely with total hospitalizations ranging from five to nine days (mean 6.5 days). In this study, these patients were included in the traditional CABG group for analysis.

Because of these limitations, definitive conclusions regarding the role of the OPCAB in the general cardiac surgical population cannot be made. Surgeon selection bias can only be overcome with a prospective randomized clinical trial. We believe, however that these results are interesting and warrant further study. Accordingly, we have now embarked and are actively enrolling patients into a prospective randomized clinical trial comparing the OPCAB to traditional CABG. Funded by a grant from the Hawaii Community Foundation, we are studying the effects of the two procedures on neurologic function, morbidity and cost. Pre and postoperative neurologic and neurocognitive function, brain perfusion and intraoperative Transcranial Doppler analysis of cerebral microemboli, are important facets of this ongoing clinical trial.

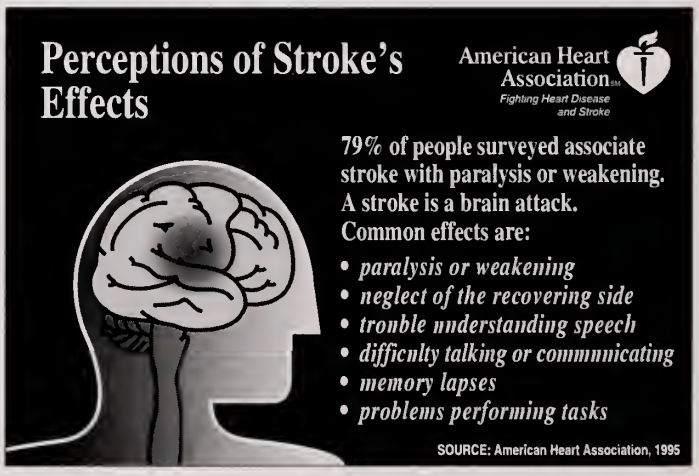
We believe that the OPCAB is an exciting new procedure, which may have much potential. As with any new medical procedure however, careful and objective study in the context of a prospective randomized protocol should be encouraged.

References

1. Puskas J.D., Wright CE, Ronson RS, et al. Off Pump Multivessel Coronary Bypass via Sternotomy is Safe and Effective. *Annals of Thoracic Surgery.* 1998; 66: 1068-1072.
2. Roach GW, Kanchuger M, Mora Mangano Christina, et al. Adverse Cerebral Outcomes after Coronary Bypass Surgery. *New England Journal of Medicine.* 1996; 335: 1857-1863.
3. Venn G, Klinger L, Smith P, et al. Neuropsychological sequelae of bypass twelve months after coronary bypass surgery. *British Heart Journal.* 1987; 57:565
4. Smith PL, Treasure T, Newmann SP, et al. Cerebral consequences of cardiopulmonary bypass. *Lancet* 1986; 1: 823-825.
5. Rosengart TK, Helm RE, Klemperer J, et al. Combined Aprotinin and Erythropoietin Use for Blood Conservation: Results with Jehovah's Witnesses. *Annals of Thoracic Surgery.* 1994; 58:1397-1403.
6. Hammon JW, Stump DA, Kon ND, et al. Risk factors and solutions for the development of neurobehavioral changes after coronary artery bypass grafting. *Annals of Thoracic Surgery* 1997; 63:1613-1618.
7. Jansen EWL, Borst C, Lahpor JR, et al. Coronary artery bypass grafting without cardiopulmonary bypass using the Octopus method: results in the first one hundred patients. *J Thorac Cardiovasc Surg* 1998, 116, 60-7.
8. Calafiore AM, Giammarco GD, Teodori G, et al. Midterm results after minimally invasive coronary surgery (LAST operation). *J Thorac Cardiovasc Surg* 1998, 115 763-71.
9. Subramanian VA. Less invasive arterial CABG on a beating heart. *Ann Thorac Surg* 1997, 63:S68-71.

continued from p. 47

24. Feller AC, Griesser H, Schilling CV, Wacker HH, Sallenbach F, Bartels H, et al: Clonal gene rearrangement patterns correlate with immunophenotype and clinical parameters in patients with angioimmunoblastic lymphadenopathy. Am J Pathol. 1988; 133:549-556.
25. Weiss LM, Jaffe ES, Lui XF, ChenYY, Shibata D, Meideiros JL: Detection and localization of Epstein-Barr viral genomes in angioimmunoblastic lymphadenopathy and angioimmunoblastic lymphadenopathy-like lymphomas. Blood 1992; 79:1789-1795.
26. Abruzzo LV, Schmidt K, Weiss LM, Jaffe ES, Medeiros LJ, Sander CA, Raffeld M: B-cell lymphoma after angioimmunoblastic lymphadenopathy: a case with oligoclonal gene rearrangements associated with Epstein-Barr virus. Blood 1993; 82:241-246.
27. Ohshima K, Takeo H, Kikuchi M, Kozuru M, Uike N, Masuda Y, Yoneda S, Takeshita M, Shibata T, Akamatsu M: Heterogeneity of Epstein-Barr virus infection in angioimmunoblastic lymphadenopathy-type T-cell lymphoma. Histopath 1994; 25:569-579.
28. Lennert K, Knecht H, Burket M: Vorstadien malingner Lymphome. Verh Dtsch Ges Pathol 1979; 63:170-196
29. Nathwani BN, Rappaport H, Moran EM, Pangalis GA, Kim H: Evolution of immunoblastic lymphoma in angioimmunoblastic lymphadenopathy. Recent Results Cancer Res 1978; 64:235-240.
30. Pangalis GA, Moran EM, Nathwani BN, et al: Angioimmunoblastic lymphadenopathy. Long-term follow-up study. Cancer 1983; 52:318-321.
31. Archimbaud E, Coiffier B, BryonPA, et al: Prognostic factors in angioimmunoblastic lymphadenopathy. Cancer 1987; 59:208-212.
32. Tobinia K, Minato K, Ohtsu T, Mukai K, Kagami Y, Miwa M, Watanabe S, Shimoyama M: Clinicopathologic, immunophenotypic, and immunogenotypic analyses of immunoblastic lymphadenopathy-like T-cell lymphoma. Blood 1988; 72:1000-1006.
33. Ch'ang HJ, Su IJ, Chen CL, Chiang IP, Chen YC, Wang CH, Cheng AL: Angioimmunoblastic lymphadenopathy with dysproteinemia—lack of prognostic value of clear cell morphology. AngiOncol 1997; 54:193-198.
34. Nathwani BN, Rappaport H, Moran EM, Pangalis GA, Kim H: Malignant lymphoma arising in angioimmunoblastic lymphadenopathy. Cancer 1978; 41:578-606.
35. Siegert W, Agthe A, Griesser H, Schwerdtfeger R, Brittinger G, Engelhard M, Kuse R, Tiemann M, Lennert K, Huhn D: Treatment of angioimmunoblastic lymphadenopathy (AILD)-type T-cell lymphoma using prednisone with or without the COPBLAM/IMVP-16 regimen. Ann Intern Med 1992; 117:364-370. *-nonrandomized*
36. Schlegelberger B, Zwingers T, Hohenadel K, Henne-Bruns D, Schmitz N, Haferlach T, Tirier C, Bartels H, Sonnen R, Kuse R, Grote W: Significance of cytogenetic findings for the clinical outcome in patients with T-cell lymphoma of angioimmunoblastic lymphadenopathy type. J Clin Oncol 1996; 14:593-599.
37. Ironside P, Cornell FN: Immunoblastic lymphadenopathy: A clinicopathological study of 16 cases. Pathology 1979; 11:27-37.
38. Kozuru M, Hashimoto M, Takahira H, Uike N, Ohoshima K, Takeshita M, Kikuchi M: AILD-like dysplasia transformed in AILD-type T cell lymphoma in an HTLV-I carrier: Usefulness of interferon-a. Acta Haematol 1996; 96:92-98.
39. Ong ST: Successful treatment of angioimmunoblastic lymphadenopathy with dysproteinemia with fludarabine. Blood 1996; 88:2354-2355
40. Sallah AS, Bernard S: Treatment of angioimmunoblastic lymphadenopathy with dysproteinemia using 2-chlorodeoxyadenosine. Ann Hematol 1996; 73:295-296
41. Takagi N, Nakamura S, Ueda R, Osada H, Obata Y, Kitoh K, Suchi T, Takahashi T: A phenotype and genotypic study of three node-based, low-grade, peripheral T-cell lymphoma: Angioimmunoblastic lymphoma, T-zone lymphoma, and lymphoepithelioid lymphoma. Cancer 1992; 69:2571-2582.
42. Kaneko Y, Maseki N, Sakurai M, Takayama S, Nanba K, Kikuchi M, Frizzera G: Characteristic karyotypic pattern in T-cell lymphoproliferative disorders with reactive 'angioimmunoblastic lymphadenopathy with dysproteinemia-type' features. Blood 1988; 72:413-421.



Use of Donepezil in Elderly Patients With Alzheimer's Disease- A Hawaii Based Study

Kannayiram Alagiakrishnan MD*, Warren Wong MD**, Patricia L. Blanchette MD, MPH***

Abstract

Donepezil (Aricept) is a reversible acetylcholinesterase inhibitor which is indicated for the treatment of mild to moderate dementia of the Alzheimer's type. We did a retrospective analysis of 41 elderly Alzheimer's subjects of different ethnic groups including a large number of Asian and Hawaiian patients. Donepezil appears to be clinically effective in patients of different ethnicities with mild to moderate Alzheimer's disease, even at advanced age.

Introduction

Alzheimer's disease is the most common disorder causing cognitive decline. It affects approximately 4 million persons in the United States.[1] Some of the cognitive signs and symptoms of Alzheimer's disease are attributed to a deficiency of cholinergic neurotransmission.[2-5] Donepezil (Aricept), a reversible acetylcholinesterase inhibitor, is indicated for the treatment of mild to moderate dementia of the Alzheimer's type.[6,7]

Published studies have not addressed the effectiveness of donepezil in Asian and Hawaiian populations. This study was done to evaluate the effectiveness of donepezil on cognitive and functional levels in mild to moderate Alzheimer's disease among the different ethnic groups in Hawaii.

Methods

Subjects

Subjects in this study include male and female elderly of different ethnic backgrounds who were referred to the Geriatrics Consultation Clinic at Kaiser Permanente, Honolulu, Hawaii. Patients who were diagnosed as having Alzheimer's Disease were classified as mild (>19), moderate (14-19) and severe (<14) based on Folstein Mini Mental Status Examination (MMSE) scores(8). Patients who had mild to moderate Alzheimer's and who didn't have any contraindication to the use of donepezil were offered this medication. Donepezil was initiated in 41 patients.

Study Design

This is a retrospective analysis of all patients who were placed on donepezil between March 1997 and June 1998. Patients received donepezil 5 mg once daily for 1 month, after which they were increased to 10 mg once daily. MMSE and Clock Drawing Test (9) scores were evaluated at 3 month intervals. Functional and behavioral status were also assessed at 3 months intervals. Analysis was done using simple analytic methods.

Results

Out of 41 subjects who were on donepezil, 13 (32%) were males and 28(68%) were females. Eight (20%) of subjects were 65-75 years old, 23 (56%) were 76 –85 years old and 10 (24%) were >85 years old. The mean age of subjects was 80 years.

Baseline MMSE scores ranged from 14-27,with a mean of 21.5 (Fig 1). 12 subjects (29%) were assessed for at least 9 months, 11subjects (27%) for at least 6 months, 15 subjects (37%) for at least 3 months and 3 subjects (7%) for 1 month. Three subjects who were assessed for 1 month didn't have a follow up MMSE at the end of 1 month. MMSE scores improved (>2) in 12 subjects (29%). MMSE scores did not change (± 2) from baseline in 15 (37%) of subjects. There were no functional or behavioral declines in the 12 subjects continuing donepezil for ≥ 9 months. The responses to donepezil in the 3 months ,6 months and 9 months follow up groups, are shown in Table 1. Trends of MMSE scores in the 9 month follow up group is shown in Figure 2.

Among the subjects 9 (22%) were Japanese, 9 (22%) were Chinese, 11 (26%) were Caucasian and 12 (29%) were Hawaiian. Chinese subjects had a mean change in MMSE by + 3.73 , Caucasian +1.00 , Japanese + 0.92, and Hawaiian + 0.00 at 3 months.

Out of 41 subjects (24%), 10 had side effects. (Table 2). Three subjects had agitation. Two had gross loss in weight (>10 lbs). Fifteen (35%) had clinically insignificant weight loss (<3 lbs) .

Nineteen subjects (46%) discontinued donepezil at or within 6 months (Table 3). The reasons for stopping the medication were side effects 8 (19%), family's wishes not to continue 3(7%), no cognitive improvement or cognitive decline 4 (10%) and non compliance 1(2%).

*Fellow in Geriatric Medicine, Division of Geriatric Medicine, John A. Burns School of Medicine, University of Hawaii, Honolulu, Hawaii 96817.

**Kaiser Permanente, Assoc. Professor of Medicine,Division of Geriatric Medicine, John A. Burns School of Medicine, University of Hawaii, Honolulu, Hawaii 96817.

***Professor of Medicine and Public Health, Division of Geriatric Medicine, John A. Burns School of Medicine, University of Hawaii, Honolulu, Hawaii 96817.

Correspondence to:
Kannayiram Alagiakrishnan MD
347 N. Kuakini Street, HPM 9th Floor,
Honolulu, Hawaii 96817
Phone: 808-523-8461
Fax: 808-528-1897

Figure 1.— Baseline MMSE score ranges in the subjects on the study

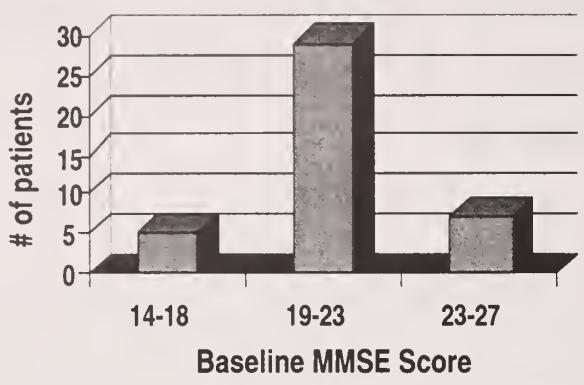


Table 1.— Responses to Donepezil

Duration of donepezil therapy	Mean Baseline MMSE score	Post intervention MMSE score
3 months- All subjects (15)	20.4 ± 3.6	21.7 ± 4.1
Responders (11)	20.8 ± 3.0	23.2 ± 3.5
Non responders(4)	19.0 ± 4.5	16.0 ± 3.7
6 months- All subjects (11)	22.3 ± 1.9	22.7 ± 4.1
Responders (8)	22.0 ± 2.1	24.5 ± 3.7
Non responders (3)	22.7 ± 1.2	19.0 ± 0.8
9 months- All subjects (12)	22.3 ± 2.9	22.2 ± 4.09
Responders (8)	22.5 ± 2.2	24.4 ± 2.5
Non responders (4)	22.0 ± 3.9	17.8 ± 2.9

Figure 2.— Trends in MMSE with Donepezil therapy over 9 months

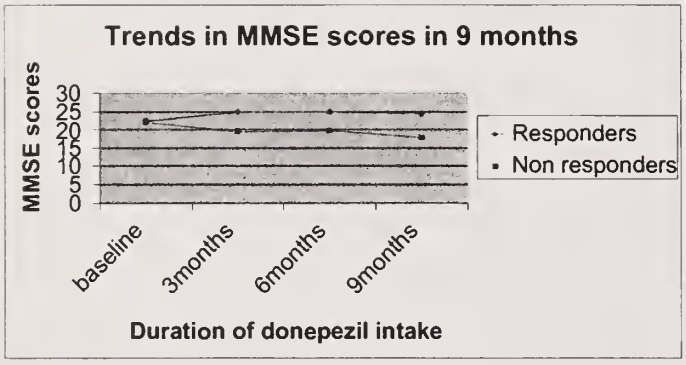


Table 2.— Side effects of Donepezil in this study

Side Effect	Number
Agitation	3
Gross Weight Loss	2
Visual Hallucination	1
Vomiting	1
Diarrhea	1
Severe Depression	1
Insomnia	1

Table 3.— Reasons for discontinuation of Donepezil treatment

Reasons	1mo	3 mo	6 mo
Due to side effects	2	3	3
Family's wishes	-	3	-
Unknown	1	1	1
No Cogn Improvement	-	2	
Cognitive Decline	-	1	1
Non-compliance	-	1	-

Discussion

To our knowledge, this is the first study which assesses and compares the effectiveness of donepezil in different ethnic groups. The results presented herein, demonstrate that donepezil appears to be clinically effective in patients of different ethnicities with mild to moderate Alzheimer's disease, even at advanced age. MMSE scores improved (> +2)or did not change (±2) from baseline in 66% of subjects in this study. Donepezil was well tolerated and continued for at least 6 months in 56% of subjects in this study.

Previously published trials utilized ADAS-cog, CIBIC plus, MMSE, CDS-SB, and IDDD to measure efficacy of donepezil.[10,11] However , the Folstein Mini Mental Status Examination is the most commonly used tool in clinical practice. This paper suggests the likely impact of donepezil on Folstein scores in patients with mild to moderate Alzheimer's disease. Age does not appear to be a factor in its effectiveness.

The limitations of this study includes its retrospective nature, different periods of follow up and the lack of a control group of untreated subjects.

Acknowledgement

The authors thank Judie Suzuki Ching, R.N. Geriatric Care Nurse, Kaiser Permanente, for her help in this study.

References

1. Evans DA, Scherr PA, Cook NR, et al. Estimated prevalence of Alzheimer's Disease in the United States. Millbank Q.1990;68:267-289.
2. Ritchie K, Kildea D. Is senile dementia "Age related" or "Aging related"? Evidence from a meta –analysis of dementia prevalence in the oldest old. Lancet1995;346: 931-934.
3. Davies P, Maloney AJ. Selective loss of central cholinergic neurons in Alzheimer's disease. Lancet 1976; 2:1403.
4. Perry EK, Perry RH, Blessed G, Tomlinson BE. Necropsy evidence of central cholinergic deficits in senile dementia (letter).Lancet 1977:1 :189.
5. Whitehouse PJ, Price DL, Clark AW, Coyle JT,Delong MR, Alzheimer's disease:evidence for selective loss of cholinergic neurons in the nucleus basalis. Ann Neurology 1981;10:122-126.
6. Yamanishi Y, Ogura H et al: Inhibitory action of donepezil, anovel cholinesterase inhibitor, on cholinesterase. Comparison with other inhibitors; in Nagatsu T, Fisher A, Yoshida M (eds): Basic , Clinical, and Therapeutics Aspects of Alzheimer's and Parkinson's Diseases. New York, Plenum Press, 1990, vol 2, pp 409-413.
7. Rogers SL, Yaminishi Y, Yamatsu K. E 2020-the pharmacology of a piperidine cholinesterase inhibitor. In :Becker R, Giacobini E eds. Cholinergic basis for Alzheimer's Therapy. Boston: Birkhauser,1991;314-320.
8. Kukull WA, Larson EB, Teri L, Bowen J et al. The Mini Mental Status Examination score and the clinical diagnosis of dementia. J Clin Epidemiol.1994 Sep;47(9): 1061-7.
9. Esteban-Santillan C et al. Clock drawing test in very mild Alzheimer's disease. J Am Geriatric Soc. 1998 Oct;46(10):1266-9.
10. Sharon L. Rogers, Lawrence T. Friedhoff: The efficacy and safety of Donepezil in patients with Alzheimer's Disease: Results of a US multicentre, randomized, double blind, placebo controlled trial. Dementia, 1996;7:293-303.
11. Rogers S.L, Farlow M.R, Doody R.S, Mohs R et al : A 24- week, double blind, placebo- controlled trial of donepezil in patients with Alzheimer's disease. Neurology,1998;50:136-145.

People know Pueblo for its...



Snazzy Web Site (www.pueblo.gsa.gov)



Cool Consumer Information Catalog?



Easy-To-Remember Phone Number? (1-888-8 PUEBLO)



Famous Hot Salsa?

It's not just the salsa. In Pueblo, the free information is also hot. You can get it by dipping into the Consumer Information Center web site, www.pueblo.gsa.gov. Or calling toll-free 1-888-8 PUEBLO (1-888-878-3256) to order the free Catalog. Either way, you can spice up your life with ready-to-use government information on topics like investing for retirement, getting federal benefits, raising healthy children and buying surplus government property.

So remember, if you want information, mild, chunky or otherwise, Pueblo is all you need to know. Sorry, salsa not available through the Consumer Information Catalog or web site.



A public service of this publication and the Consumer Information Center of the U.S. General Services Administration.



THE QUEEN'S MEDICAL CENTER

FROM DISCOVERY TO PRACTICE:

Genetics And Molecular Biology



HONOLULU, HAWAII

The Second Annual Queen's Conference

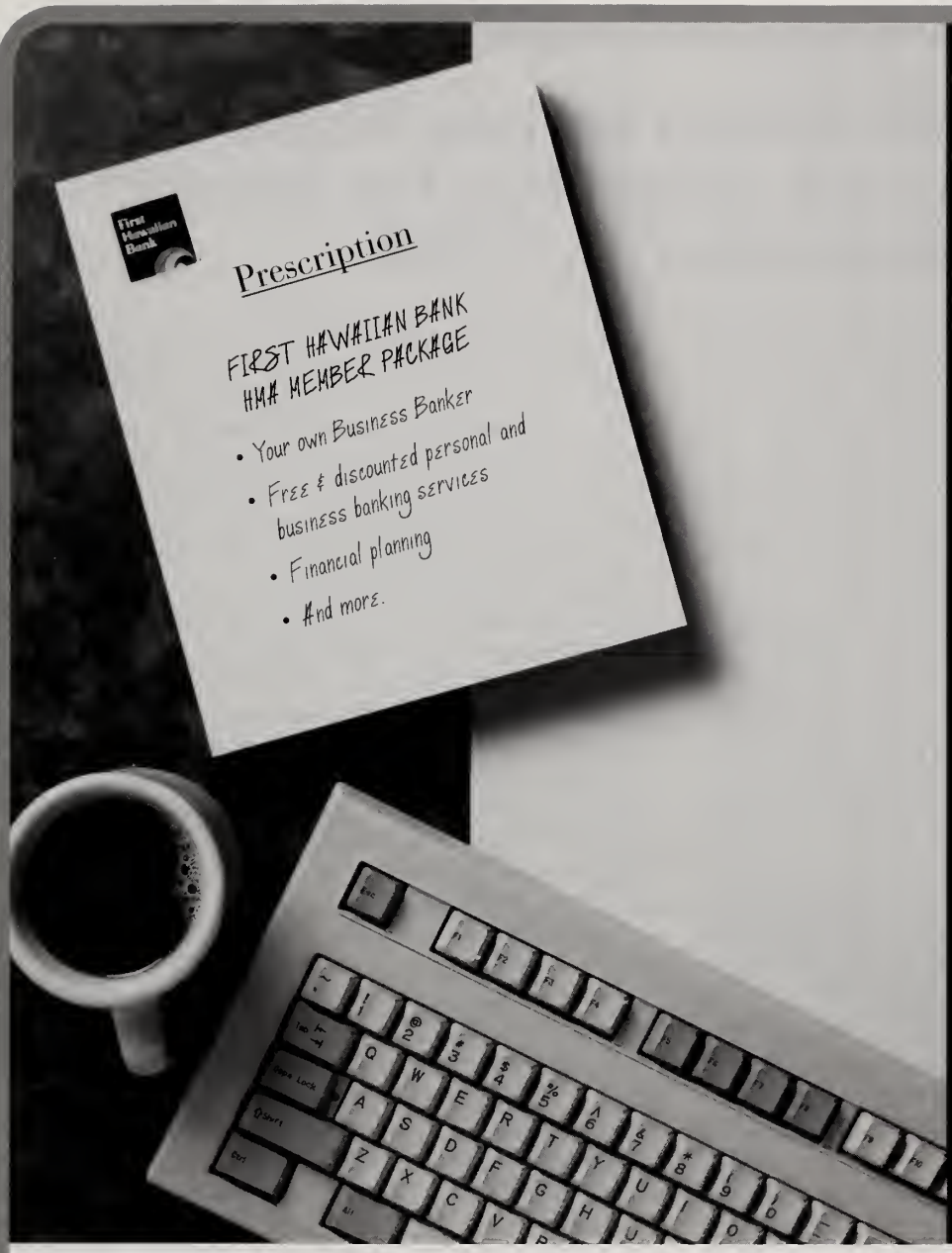
Monday, Tuesday, Wednesday
February 28,29, March 1, 2000
Hilton Hawaiian Village, Honolulu

- Conference Chair
  R.Michael Blaese, MD, PhD
  Clinical Gene Therapy, NIH (retired)
  President Chief Scientific Officer, Kimeragen Pharmaceuticals

- Topics include discoveries and applications in cardiology, oncology, and neurosciences as well as clinical implications of the Human Genome Project, ethical issues, and gene therapy. Confirmed speakers are from some of the most prestigious research and clinical centers across the United States.

If you wish to be mailed a brochure,
call **(808) 537-7009**
or visit our web site at www.d2p.queens.org

Sponsored by The Queen's Medical Center, Honolulu



Your prescription for financial health.

Extra banking benefits for HMA members.

First Hawaiian Bank has the prescription for HMA members. It includes free and discounted personal and business banking services, discounted mortgage loan fees, reduced rates on business loans, free consultation and reduced fees on financial planning, and a Business Banker to help you with it all. It's exactly what you need to keep your finances in excellent health. If you're an HMA member, sign up by calling 525-6262 (or call collect from the neighbor islands).

First Hawaiian Bank®

THE power OF yes.

EQUAL HOUSING LENDER Member FDIC www.fhb.com

Special Presentation to the State Legislature: Hawaii Coalition for Health December 8, 1999

When it comes to health care, the future is best seen not by adopting a global perspective, but rather by focusing on what is purely local. An island community like Hawaii cannot depend on a phone or fax line, or the next airplane or ship, to bring dedicated, experienced, and qualified health care professionals to its shore. Hawaii must preserve within its own community the sensitive hands and intuitive minds of experienced specialists; the nurses and doctors attuned to the needs of a multiethnic and multicultural community; and the rural and primary hospitals that are accessible to all.

The Hawaii Coalition for Health is a consumer health advocacy organization that seeks to remind decisionmakers and the public that providing optimum care for patients depends on preserving the health of all components of our health care industry, from institutional providers to individual providers, from health plans to the professional schools. Since its inception in 1996, the Coalition has provided balance to a health care industry where health plan management felt free to diminish the quality and quantity of patients' medical care at will.

The health of Hawaii's health care industry impacts not only consumers and current practitioners, it impacts the future of the University of Hawaii professional health schools and their graduates as well. The Schools of Medicine, Nursing, and Public Health contribute enormously not only to the quantity of health care in our community, but also to the high quality of health care in this State. The symbiotic relationship between our professional health schools and providers throughout the State needs to be considered and nurtured by policymakers.

Informed policymakers can formulate and implement policies that will preserve and support all facets of Hawaii's health care industry. In 1998 and 1999, our Legislature enacted statutory protections for patients that helped to level the playing field for both patients and providers. However, the Coalition is now concerned that the imbalance of bargaining power between managed care organizations and providers will undermine those protections. On December 8, 1999, the Coalition convened a panel of experts to share their concerns about the current state and future prospects of health care in Hawaii. The following articles represent those experts' viewpoint in their primary areas of concern.

Arleen Jouxson-Meyers Esq., MD, JD, MPH, President, Hawaii Coalition For Health

The Hawaii Coalition For Health, for those who don't know about the organization, is a 3-year old 501(c)(3), non-profit corporation established to advocate for consumers in any matters which affect health. The organization, presently with a membership of about 1,200, comprising 400 physicians and other professionals, and 800 general public, provides a forum for consumers to become involved and to participate in policy making regarding how their health care is delivered. The Coalition believes that it is time for all of us to take our heads out of the sand and to bring the problems that exist into the sunshine, and to end the downward trend in the quality and availability of health care delivered in Hawai'i, before we totally lose the fruits of many years of hard work.

The Coalition hosted a meeting at the legislature on December 8, 1999 with a purpose of raising awareness of the serious problems that exist and hopefully to spur our legislators to create a forum in which we can, as a community, explore solutions. I would like to thank Senator Suzanne Chun-Oakland and her staff for assisting us in setting up the meeting. Unfortunately, due to some mis-communication that occurred, many of our key legislators were unable to attend, but I hope that by their staff carrying back information to them, we can still accomplish our objectives. I would also like to thank Professor Sylvia Law, a visiting law professor from New York University, for permitting me to use data which have resulted from research she is conducting.

In some respects Hawai'i stands out as a leader in our nation: Firstly, because only 8.8% of our population is uninsured, whereas, 16.3% of Americans nationwide were uninsured in 1999, substantially more than when managed care took hold in the late 1980's and we were promised that more Americans could be insured out of savings generated by more efficiently managing health care costs. Secondly, Hawai'i's health care costs are lower than the rest of the nation. We spend roughly 11% of Gross State Product on health care versus 15% nationally. In light of the fact that Hawai'i's life expectancy is 79, four years longer than the U.S. average, our low expenditures on health care is even more remarkable. In other respects, perhaps, Hawai'i has cut too close to the bone and, similar to the federal government recently re-evaluating Medicare reimbursements, we should reconsider whether we too have gone too far.

Numerous problems are emerging in Hawai'i: Firstly, our hospitals are facing serious financial difficulties. We recently heard that Wahiawa General Hospital had defaulted on its State bonds. Kahuku Hospital has been considering closure for quite a while. The hospital CEO's and Rich Meiers from the Healthcare Association of Hawai'i were not present at the legislative meeting because they were meeting with Governor Cayetano at the time and were holding a press conference to inform law makers and Hawai'i's people of the critical problems faced by our hospitals. I have personal knowledge from my participation on the medical staff of certain hospitals, and as a patient, that the safety and quality of care has been dangerously

eroded over recent years. I chose not to single out any one hospital in a public meeting, because as victims of virulent health insurance reimbursement practices, they are all engaging in similar cost-cutting measures which have led to less availability of unprofitable services, demoralization of our nursing profession, and unsafe and poor quality care being delivered. Some have tried to diversify their revenue sources by starting health insurance plans, but have not had the economic power to compete in the insurance market place and have been consumed by our more powerful health insurer. Secondly, the medical school and other health professional schools are no longer adequately supported by the State or by the hospitals. We well know that the presence of health professional schools in a community not only facilitates provision of culturally sensitive care, but plays a direct role in the safety and quality of care delivered. By being able to rub shoulders, on a day-by-day basis, with academicians, practicing professionals are able to maintain a very high standard of knowledge and current expertise which in turn relates to a greater degree of safety and quality for our patients. For goodness sake, we live on an island unable to drive to the next tertiary care center in a neighboring state. If we cannot meet our own needs, we are dead in the water. Sadly, we have already lost our School of Public Health, and we have no assurance that we can get a program of public health accredited. Thirdly, Hawai'i's physician population has been deprofessionalized and is struggling to survive. A notable number of my physician colleagues have difficulty paying the rent, and some, especially the more senior and more experienced are leaving Hawai'i, leaving more of our health care to newly graduated and inexperienced physicians. They too cut costs by reducing the number of qualified nurses they employ and by providing a lower quality of care than before. Furthermore, the way physicians practice medicine and what they can do for their patients is controlled by health insurers through enforcement of one-sided and unfair contracts. Doctors in Hawai'i, because of the monopolistic power of one health insurer, the Hawai'i Medical Service Association, to whom physicians must sell their services or go out of business, are therefore powerless to advocate for their patients' rights. Fourthly, Hawai'i has a far greater percentage of uninsured children than in the United States as a whole. In 1997, 9.8% of all children in Hawai'i had no health insurance, and 13.1% of children were under six years of age. Even in light of these statistics, Hawai'i has not claimed the $8.9 million federal dollars available to cover children under the CHIP program. Lastly, Hawai'i's community health centers play an essential role in providing care to uninsured and in keeping the cost of health care low, yet we are threatening the viability of these centers by permitting unreasonably low capitation payments which prevent them from adequately caring for the uninsured and for patients with multiple medical needs.

It can be easily seen that these complex problems cry out for a collaborative approach to problem solving, not the heavy-handed and one-sided mechanisms that are often presently used. Each and every one of us can count on one fact: we will need health care at some time in our lives. Let us guard against further erosion of our access to high quality and safe health care.

Edwin C. Cadman MD,
Dean, John A. Bums School of Medicine
Interim-Dean, School of Public Health
University of Hawaii at Maona
Honolulu, Hawaii

It is a pleasure for me to be here today and share with you my vision for our medical school. I am delighted to be the Dean of the John A. Bums School of Medicine. There is nothing I would rather do than be the Dean of this medical school. I share your concerns, aspirations and dreams for the school. I chose to come to Hawaii because I believe that the Governor, the Legislature, the University, the community, the hospitals, the faculty, the physicians of Hawaii and the students want to be a part of an excellent medical school.

To achieve our goals of excellence will require all of us to rethink what it is we wish our medical school to become. Some of the faculty will need to redirect their energies and talents in different directions to accomplish these objectives.

A Medical School's success is measured many ways. For a community the yardstick of success is often related to the positive influence it has on the well-being of the health of the citizens in the region and state, and the impact it has on the advancement of medical science. For a single individual, it may be how effective someone was at the school in helping you or a friend resolve a personal illness or identify an appropriate referral to a competent physician. For you, the state legislature, it may be the return on investment that you have made in the medical school.

People have always had a great interest in medicine and health. Most communities in which a medical school is located, take great pride in their medical school, and enjoy, in fact, take great pride in the success of the students and faculty.

There are many clinical settings in which medical schools are expected to be leaders. These include the study and evaluation of human health and disease, not only in the health of populations, the purpose of which is to improve the health of groups of people; but, also in the basic science investigation of the molecular biology of disease. Most medical schools provide the clinical leadership in selected areas where innovation and clinical research are required to advance and improve our diagnostic capabilities and treatment options.

My vision is that our medical school should become more involved in the research that is critical to the future understanding of disease. And from this research become recognized leaders in the new biomedical revolution.

My vision includes programs devoted to how to measure and document the difference between good patient care and outstanding patient care. And then communicate these findings effectively to patients and physicians. As a profession, we can do a lot better in the defining the quality aspects of patient care. We must be the paragons of excellence in medical care, and learn how to communicate more effectively to our patients and their families. We must teach them what excellent medical care is, so that they can become more involved in the decision process regarding their diagnosis and treatment.

Medical schools traditionally have had the responsibility for the leadership in continuing medical education of the faculty and local physicians and other health care professionals within the region.

Some schools have also assumed the leadership in the use of information technology to assist physicians and patients achieve access to medical knowledge and care options.

My vision is that we enhance our efforts in continuing medical education, so that we can become a site of choice for continuing medical education for mainland physicians. A mature continuing medical education program could attract thousands of physicians and their families to Hawaii annually. These programs would be a few days to a week in length, with multiple different topics covered over the year. And, of course, medical schools have the sustaining reputation of being the crucible of new knowledge that affects and advances our understanding of health and disease from which improved patient care comes.

The foundation on which all medical schools are built is their commitment to education. The original purpose of a school was to educate, and in so doing, make certain the future generations of physicians are better than we are. Therefore, a significant measure of success can be determined by the quality of our students and their future successes in whatever it is they chose to do. Our students are indistinguishable in their academic accomplishments from those students of the best medical schools in the country, including Harvard and Yale. We standout as a leader in our commitment to accepting the student of a different cultural background. We have the most diverse student body of any medical school. And, we have proven to others that diversity is an asset.

We graduated our first four-year class in 1975, since then our medical school has graduated 1554 students. Sixty percent of Hawaii's physicians are graduates of the John A. Burns School of Medicine or trained in our residency programs. There are 1100 applicants for a class of 62, 25% of whom are graduates of the University of Hawaii. Six to ten are out of state residents. Ten years ago, our medical school began what is called Problem Based Learning, or PBL. This was a radical departure at the time from the traditional training process, which was two years of lectures followed by two years of practical experience in a hospital. PBL is focused on specific patient diagnosis or set of clinical problems. The learning is done in small groups of 5 to 6 students, referred to as tutorials, supervised by faculty. The focus of these tutorials is to stimulate the student into thinking about information and analyzing data. There are lectures, but they are related to the clinical problem under discussion. Our medical school has received national recognition for this program, and many students apply here because of it.

My vision is to build on the successes of this innovative educational program, and use the new electronic technology to enhance the educational process. In so doing we can consider exporting segments of our programs to other schools and medical students. We have plans to work more closely with the neighboring islands of Hawaii in our educational programs.

In addition to doing so well in student education, to achieve a national reputation of excellence, a medical school must demonstrate excellence in research-both clinical research and basic research. Fortunately, there are funds available from federal and private sources for which we can compete to support our research endeavors. Great medical schools are not dependent on state funds for all of their support, but generate substantial dollars from these national funding sources.

The National Institutes of Health, best known as the NIH, is a federal agency whose only purpose is to support biomedical research, mainly through a competitive grant process. It has a budget of 15.7 billion dollars; and both the republicans and democrats are committed to doubling this funding over 5 years. In this year's 2000 budget there is an additional 2.3 billion dollars earmarked for the NIH, which will bring the total NIH spending authority to 18 billion dollars. Private foundations, such as the American Cancer Society, American Heart Association, American Diabetes Association, the Howard Hughes Medical Institute and pharmaceutical companies contribute in excess of 50 billion dollars toward the nation's biomedical research efforts.

Another vision I have is to recruit physician-scientists as well as basic science investigators who can compete successfully for these dollars. Faculty will be recruited whose research will influence the future of our thinking about the normal and abnormal condition, improve the diagnoses or treatment of human disease, or help us understand why there are different rates of illness in people of different ethnic origins.

Biomedical and clinical research is an industry that can become an economic engine. Successful investigators bring new dollars into a region and state through their grants and contracts. In many instances, these can average 1 to 2 million dollars per year for each research team. An average faculty member has 2 to 3 grants that total half a million to a million dollars. These research teams hire support staff, including research technicians, administrative personnel, and provide the training ground for young scientists and physicians who will be the future faculty and practitioners. In addition to these immediate benefits, discoveries made in these laboratories are often the genesis of new small biotech companies that develop in the surrounding communities.

Many of our faculty are considered leaders in their chosen fields of investigation, but we need more of them. I hope to provide the infrastructure that will help the current faculty become even better at what they do.

With a long-range strategic plan that establishes the areas in which we wish to excel, we can recruit additional faculty to join those who are here. We will create an office of research at the Medical School that will assist the medical school faculty in writing grants and the required reports. This office will also work closely with those who do clinical research to make certain that patient data is collected in a timely and accurate fashion; and that all of the federal and state mandates related to clinical research are followed.

The reputation of a medical school cannot be made on education alone, there needs to be the appropriate mix of education, which must be done in an exemplary fashion, AND innovative, well respected and recognized research.

A successful medical school will be an asset to the city of Honolulu and the state of Hawaii. It will be an economic engine that brings in new dollars, it will become nationally recognized for excellence in education and research, it will be a school that outstanding faculty will want to join. We can develop a reputation that parallels those of the Mayo Clinic, Yale, Harvard, Johns Hopkins, Stanford, and the Cleveland Clinic. We must think big and believe. We have an asset that no one else has-we have Hawaii! A destination on everyone's list; the most culturally diverse population of any state; and, a geographical location that provides us the great responsibility to help others in the Pacific region.

We can recruit to Hawaii. What is needed is the infrastructure for our new faculty to work. We need to view the medical school and our faculty, as any other business-our product is education, research and clinical care. To be productive, as with any other business, requires appropriate space equipped to meet the needs of the 21st century.

I do believe that the state should be the sole or even the major source of funds for the medical school. I expect the state to be a partner with the federal government and private foundations. The state currently contributes 15 million dollars to our 60 million-dollar budget. These figures do not include the time that the private physicians donate to the education of our students and young physicians in training, the 250 residents. Already your support is being leveraged at a rate of 4 to 1.

I wish to comment briefly on the School of Public Health. First I welcome this school into the medical school. I consider public health an important discipline. A measure of personal success for me in five years will be the success of the school of public health. I will do what is necessary to build the school, not dismantle it further. For you to be blamed for the deterioration of the school of public health is inappropriate. The real issue was that the school did not have balanced portfolio of funded research to sustain the academic mission.

I wish to lead both the Medical School and the School of Public Health into a situation where funding is from a variety of sources, so that we will be less vulnerable when any one funding agency sets different priorities.

I view the State as our KEY partner, AND you have demonstrated your wisdom and leadership over the years by constructing buildings and providing the operating dollars to sustain the administration and essential faculty of the school. The Institute for Biogenesis Research is just the most recent example.

I am meeting with community leaders, you, the state legislature, the University administration, the faculty, the students, our State senators, Inouye and Akaka and congressman Abercrombie and congresswoman Mink. From their input we will develop a strategic plan. I will share this plan with you. A partner needs to be involved in the thinking and creation of the plan. I promise that I will never surprise you with a request. I will never blame you for our shortcomings. All I ask is that you become an involved partner.

Before I close, I want you to know just how outstanding the hospitals are in Honolulu. These hospitals compare favorably with the best in the country. These hospitals offer a strength that most medical schools do not have. As you know, medical students' major patient-directed education occurs within the hospital or clinic setting. The private physicians and clinical faculty are equally impressive, and also compare with the very best in the country.

If we set our standards high and look beyond the nearest horizon, we can become a medical school with a national reputation for excellence in all areas. I want the John A. Burns School of Medicine to be a school of which our faculty, our community, and our State can be most proud. An excellent medical school sets the standards of health care expectations. I want our school to set the highest standards; I want to prove to our community the value of having a medical school. I never want there ever to be even the whisper of closure. It is my responsibility as dean to communicate effectively with you and others in the community so that over time we can all understand the extraordinary value that a medical school can have in a community.

Sylvia A. Law JD, Elizabeth K. Dollard Professor of Law, Medicine, and Psychiatry New York University School of Law

I am honored to be included in this illustrious group. I am Sylvia A. Law, the Elizabeth Dollard Professor of Law, Medicine and Psychiatry at New York University Law School. Since 1970, I have studied health care financing, written many books and articles, and done legal work to improve access, costs and quality for all people. I came to Hawaii to learn from you.

You have many reasons to be proud of your health care system. You do better than any state in assuring the benefits of health insurance coverage. Your network of community health centers is the best in the Nation. Your commitment to public health, exemplified by your clean needle law, is unparalleled.

There is so much to admire in Hawaii health care that it seems ungracious to talk about problems. Nonetheless, that is what I will do. In the short time available to me, I want to address two problems: first, the need for more probing Insurance Department scrutiny of HMSA, and second, child health care.

Dr. Meyers and Professor Miller have made a strong argument that HMSA does not treat physicians in a way that it is fair and reasonable, and that patients suffer as a consequence. I do not know enough to evaluate the substantive merits of these claims. But I do believe that they deserve to be taken seriously.

HMSA exercises a market power in Hawaii that is greater than any single insurer has in any other state. HMSA wields monopoly power as a seller of health insurance and monopoly power as a purchaser of the services of health care providers. It has enormous capacity to exercise control. Functionally, Hawaii has a "single payer" health insurance system. Progressive people often favor a single payer form of health insurance, recognizing that a powerful payer can do sensible planning and negotiate with providers on behalf of patients. But here the single payer is not the government, but a private organization, HMSA. My early impression is that HMSA does a pretty good job in many ways. Because HMSA exercises such great power, it should be held to high standards of fairness in both process and substance. The Insurance Commissioner is the most likely candidate for the job.

In short, Hawaii is unique in that HMSA has so much power. Because it has so much power, the people—consumers, patients, employers, tax payers, hospital, doctors, and other providers—have a special interest in knowing that it is acting fairly and reasonably.

Hawaii seems to be unique in another respect. In most states, all insurers are required to file rates with the Insurance Commissioner, and he or she is required to approve them as "fair, reasonable and non discriminatory." Frankly, in most times and places, insurance commissioners rubber stamp the rates submitted. But they have the general statutory power to probe and to disapprove rates that are not fair and reasonable. Insurance commissioners in other states have used such general regulatory authority to oversee contracts between health insurance companies and health care providers.[1] In Hawaii, the Insurance Commissioner plainly has this power in relation to casualty, surety, property, marine and transportation insurance.[2] I understand that the Commissioner has used this power to review auto insurance and return money to insured people. Beginning in

2000, health insurers are required to pay the Insurance Commission $10,000 per 70,000 non-governmental members, "to defray any administrative costs, including personnel costs, associated with health insurance regulation."[3] The mandatory fund plainly implies significant insurance department regulation of health insurance. In addition, the Insurance Commissioner has broad subpoena power.[4] The Hawaii Insurance Code is not a model of clarity.

HMSA should be subject to scrutiny and regulation by the Insurance Commissioner. The Commissioner should assure all the people that rates paid are fair, reasonable and non discriminatory. He or she may have that authority under current law. If this is not clear, the legislature should affirm that the Insurance Commissioner should assure that rates to both consumers and providers are fair, reasonable and nondiscriminatory.

I would like to briefly address another issue: child health. While Hawaii generally does a better job than most other states in providing health insurance coverage and care, children in the Islands are less likely to have insurance coverage, either public or private, than the population as a whole.[5] In 1999, estimates of the number of Medicaid and QUEST eligible children who were not enrolled ranged from 4,500 to 13,000.[6] Several factors contribute to high rates of uninsured children. The Prepaid Health Care Act mandates coverage for full time employers, but not for dependents.[7] The QUEST application process is extraordinarily complex and slow.

The lack of health insurance for children has many adverse consequences. Despite the state's generally good health statistics, the rates of measles, mumps and rubella — classic childhood diseases that can be prevented by immunization — are higher in Hawaii than in the rest of the United States.[8]

In 1997, Congress created the Children's Health Insurance Program (CHIP) to provide federal funds to states to "enable them to initiate and expand the provision of child health assistance to uninsured, low-income children."[9] Under the CHIP program, Hawaii is entitled to $8.9 million in federal dollars a year from 1998 to 2003.[10]

When CHIP went into effect in 1998, many states were ready with programs to claim the maximum amount of federal funds available to provide health insurance to low income children not eligible for Medicaid.[11] Most states are now in the second or third phase of their CHIP programs.[12] In fiscal year 1998, Hawaii failed to claim $9 million in federal dollars available to it to provide heath services to low income children. The state passed up the additional $9 million federal dollars available to it in 1999. On Oct.22, 1998, Hawaii filed an application to participate in CHIP in 2000. The state requested $602,566 to serve 440 children in the year 2000, and an additional $581,045 to serve an additional 440 children in the year 2001. Hawaii's proposal was quickly approved by the federal Health Care Financing Administration. But the state legislature has appropriated no funds to implement CHIP. Rather, the state Senate passed a resolution promising to devote 35% of a possible settlement in national tobacco litigation to "the department of health for health related programs, including the children's health insurance program." Hawaii may be the only state in the U.S. that has failed to claim federal CHIP money.

Why would Hawaii, the Health State, leave eighteen million dollars to care for low income children in Washington in 1998 and 1999, and then claim only a half million of those dollars for the year 2000? The answer is not that the children of Hawaii are already well served. The 1990s were economically difficult for Hawaii, but tourism has now again reached record levels. Other poorer states have picked up their CHIP money. Hawaii spends a smaller proportion of its budget on Medicaid than most states. In many contexts, Hawaii understands that you need to spend money to make money. In the case of CHIP, the federal government guarantees *65* cents for every 35 cents that the state invests. This is a secure investment. Further, Hawaii accurately can tell prospective investors that health care costs are low and workers are healthy. Finally, health care is Hawaii's second biggest industry, behind tourism, and growing the health care sector also grows the economy.

Some suggest that any effort to enroll children in CHIP is likely to find additional children who are eligible for Medicaid. There is a widespread belief among health policy makers in Hawaii that the state is prohibited from spending any more on health care services for low income people than it was spending when QUEST was adopted. This fixed pie constraint is often attributed to the federal government. But, the federal budget neutrality requirements allow adjustments both for inflation and for an increase in the numbers of people qualified for AFDC/TANF, and children eligible for GA and SHIP. Further, administrative costs for QUEST are not subject to the federal budget limit and the federal government pays a 90% match for the development of the QUEST information system. Alternatively, the fixed pie assumption is attributed to poor economic conditions. But as the economy improves, it becomes more obvious that the decision to cap state spending for health care for poor children is a political choice, not compelled by any external or legal force.

In sum, I have two suggestions. The Insurance Commissioner should scrutinize relations between HMSA and providers and insist that rates and payment procedures be fair and reasonable. Hawaii should pick up its federal CHIP money for health services for low income kids.

References

1. See e.g. In re Rae Filing of Blue Cross Hosp. Serv., Inc., 214 S.E.2d 339 (W.Va.1975)(commissioner's statutory duty to determine that subscriber premiums were reasonable created an implied authority to determine that payment rates to hospitals were reasonable).
2. Haw. Stat. Ann. § 431:14-101 (1999).
3. Haw. Stat. Ann. § 431:2-216 (1999).
4. Haw. Stat. Ann. § 431:2-204 (1999).
5. In 1997, 9.8% of all children in Hawaii lacked health insurance, and 13.1% of children under age six had no insurance coverage; "the percentage of the uninsured who are children is higher in Hawaii than in the U.S. overall." HEALTH TRENDS IN HAWAII, 1999, 104-105.
6. The low estimate is provided by the state Health Department, based on a telephone survey. The higher estimate is provided by the State Primary Health Care Association. Helen Altonn, *Groups Seek Kids With No Insurance: A Campaign Tries to Enroll Children Eligible for Health Care Assistance*, HONOLULU STAR BULLETIN, A-1, July 15, 1999.
7. Haw. Rev. Stat. § 393-13 (1974).
8. HEALTH TRENDS IN HAWAII, 1999, *supra* n. — at 26.
9. The Balanced Budget act of 1997, Pub. L. 105-33, Title IV, 111 Stat. 251 105th Cong, 1st Sess., 1997. (Hereinafter BBA). BBA § 2101 (a).
10. Hawaii Title XXI Program, Submitted Oct. 22, 1998, approved, Jan 19, 1999, effective Jan. 3, 2000. [Hereinafter Hawaii CHIP Plan.]
11. National Governors Association, *Nation's Governors are Proud Partners in Effort to Expand Health Insurance to America's Children: States Act Quickly to Seek Out and Enroll Uninsured Children*, Press Release, Feb. 18, 1998.
12. American Academy of Pediatricians, STATE ACTIVITY IN RESPONSE TO TITLE XXI (SCHIP), available www.aap.org/advocacy/newplans.htm, updated Nov. 1999. [Hereinafter, AAP, 1999].

Health Education Needs in Hawaii: Social Work, Dental Hygiene and Nursing

Rosanne C. Harrigan EdD, APRN-Rx, FAAN and Barbara Molina Kooker DrPH, APRN, RNC

Abstract

In this article, the need for selected health education programs in Hawaii will be discussed. Changes in the health care system, population and provider population impacting supply are identified. Health trends in Hawaii are highlighted and strategies needed to assure that Hawaii 's demand for health professionals in social work, dental hygiene and nursing are suggested.

Introduction

Health trends, current and projected health care system changes, population and provider factors, and supply and demand issues driving the need for education of selected health professionals in the State will be discussed in this article. In addition, the difficulties associated with recruiting qualified health professionals are presented. Economic leverage and research and service contributions are offered as strategies undertaken by the University of Hawaii at Manoa School of Nursing to address workforce supply and demand issues.

Social Work

The School of Social Work at the University of Hawaii at Manoa has the only MSW and PhD programs in social work in the Pacific. It also has the largest B.S. program. Social work is among the fastest growing profession for the next ten years and the School provides graduates to meet the need. These graduates are educated to understand the specific concerns and values of Hawaii's multicultural population. They are prepared for the workforce needs of the State, for example in child welfare, mental health, and services to older people.

In addition, the School is a leader nationally in producing research on Asian Americans and Pacific Islanders. The research generates knowledge needed to develop policies and programs within our State. The School brings in an annual amount larger than its general fund budget in training and research funds. The MSW program is ranked 29th out of 150 by US News.[1]

Dental Hygiene

Statistics indicate a continued need to provide oral health care, prevention and education services to the people of the State of Hawaii. The Department of Health reports that on screening of 70,000 public school children, the dental health of Hawaii 's school children is poor and among the worst in the nation. Some ethnic groups and island communities in Hawaii have disproportionately high rates of dental disease. Ninety-four percent of 6-year- olds nationally are caries-free compared to 18% of 6-year-olds in Hawaii. Five percent of mainland 5-year olds have "baby bottle tooth decay" compared to 15% of 5-year-olds in Hawaii . The highest rates of this type of tooth decay are among Native Hawaiians (21%), Filipinos (32%) and residents of Molokai (33%).

Several areas of the neighbor islands are designated as "dentally underserved." In 1992, 71% of dentists surveyed indicated there was a shortage of dental hygienists in the State. A large percentage of dental offices have no dental hygienist due to the chronic low supply of hygienists. Hygienists are needed on the neighbor islands and Oahu.

The Dental Hygiene program at University of Hawaii at Manoa is the only dental hygiene education program in the State of Hawaii. The program parallels the entry-level educational goal (baccalaureate) of the national professional organization, the American Dental Hygienists' Association. The program is accredited by the American Dental Association and 100% of graduates pass National and State Board Dental Hygiene Examinations on their first attempt. The program ranks 47 of 212 or in the top 25% of national performance ranking by the National Board of Dental Hygiene Examiners. This program is attended primarily by women who are often heads of households and have a need to access educational opportunities on island.

The Program also operates a clinic that provides low-cost oral care as well as dental health education to students and residents (elementary schools, skilled nursing facilities, community rehabilitation programs, Special Olympics, etc.) of Hawaii. Casts are also made for University of Hawaii athletes in order to fabricate their mouthguards. Career education is also provided at various high schools and University of Hawaii affiliates to recruit students from diverse backgrounds.

Nursing

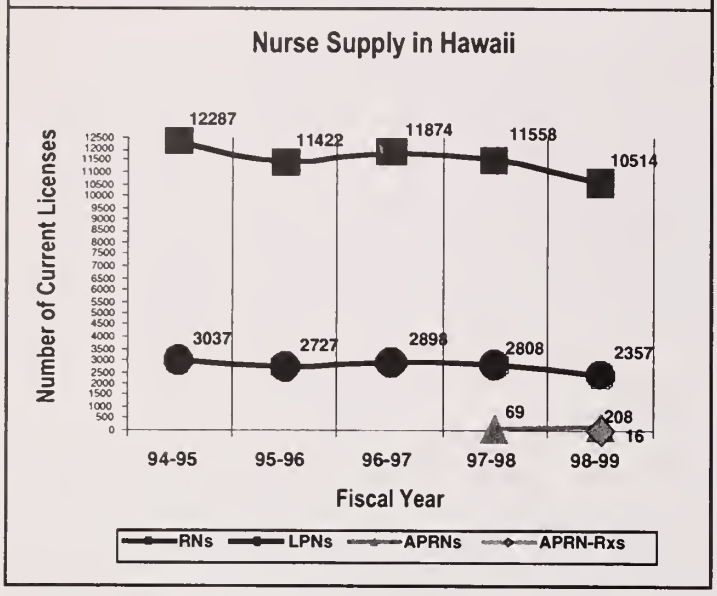
In order to meet the health care needs of the citizens of the State of Hawaii, adequate numbers of nurses are essential. Demographic and educational characteristics of nurses in the nation and Hawaii have an influence on the supply of practicing nurses as well as the supply of nursing faculty. This section describes these characteristics and addresses the approach used by the University of Hawaii School of Nursing to address these issues.

Demand

Despite a wave of managed care changes such as mergers, consolidations, and briefer lengths of stay that saw hospitals trim their ranks of inpatient RNs by 6% between 1992-1996, the number of employed RNs nationwide grew by its highest annual rate ever — an average of more than 3% a year, to 2.1 million in the same period, according to the latest figures from the Division of Nursing, U.S. Department of Health and Human Services.[2] Even as many hospitals cut their inpatient RN staff, nursing employment boomed in other hospital areas between 1992 and 1996, up 25% in outpatient and labor and delivery units, up more than 15% in emergency rooms, and rising nearly 10% in surgical facilities, federal figures show. In the same period, the number of RNs in community health centers rose 42%, nearly triple the growth in the previous four years, and climbed by 32% in long term care facilities.[2]

The increased hiring of RNs has spurred multiple factors including: (1) the mounting health care needs of increased numbers of elderly; (2) a growing population of hospitalized patients who are older, more acutely ill, and in need of more skilled RNs per patient; (3) the rapid expansion of front-line primary care to many sites throughout the community; and (4) technological advances requiring more highly skilled nursing care. A related factor in hiring trends is the aging of RNs. In 1996, the average age of RNs in the U.S. was

Figure1. Nurse Supply in Hawaii, 1994 - 1999



44, up from 40 in 1980. Only nine percent of RNs were under 30 years of age.[3] In 1997, the mean age of RNs in Hawaii was 44.9.[3] Since high levels of retirement are projected in the next 10 - 15 years for the majority of the RN workforce, the significance of preparing replacements for them in the face of increasing demand is staggering.

Federal figures project that if current trends continue rising, demand will outstrip the supply of RNs beginning approximately 2010. By 2015, says the Federal Division of Nursing, 114,000 jobs for full-time equivalent RNs are expected to go unfilled nationwide.[4] Presently, in an expanding number of markets, hospitals and other employers are struggling to meet a rising need for RN care and have stepped up recruitment.

Supply

The majority of RNs in the U.S. hold associate degrees or diplomas in nursing. Although 31% of RNs in the United States in 1996 held baccalaureate degrees (41% in Hawaii), 32% held two-year associate degrees (31% in Hawaii), 27% held diplomas (18% in Hawaii), 9% had a master of science in nursing (10% in Hawaii), and fewer than 1% had obtained the doctoral degree (less than 1% in Hawaii as well). This disproportionate supply of nurses with associate degrees and hospital diplomas has led many policymakers to call for the closure of significant numbers of these programs in favor of accelerated production of baccalaureate and graduate prepared nurses. The National Advisory Council on Nurse Education and Practice, an advisory panel to the federal Division of Nursing, has recommended, as a policy target, that at least two-thirds of the basic nurse workforce hold a B.S. or higher degree by 2010.[2] A recent report by the Pew Health Professions Commission (1995) urged the closing of up to 20% of associate degree and hospital diploma programs and more concentrated production of nurses from baccalaureate and graduate programs.[5] The nurse supply in Hawaii is described in Figure 1[6]. A steady decline over the past five years can be noted.

The health care system's complexity requires nurses who (1) are capable of more independent clinical decision making in less structured environments, (2) are prepared broadly in basic as well as behavioral and social sciences and management, (3) can communicate effectively, and (4) are oriented more to health promotion, maintenance, and cost-effective coordinated care. The B.S. in nursing curriculum provides such preparation, including education and training in community based primary care, not typically a part of associate degree or diploma programs, and gives nurses a foundation to enter graduate education for advanced practice and management roles.

At increasing numbers of health systems nationwide, B.S. prepared nurses are practicing in ways that recognize their different educational preparation and competencies from other entry-level RNs. In these differentiated practice models, B.S. nurses not only provide more complex types of patient care but also design and coordinate a comprehensive plan of care for the entire length of a patient's stay—from pre-admission to post-discharge, supervise nurses aides and other unlicensed assistive personnel, design teaching plans for patients, and collaborate with physicians, family members, and other hospital departments and research staff. Associate degree prepared nurses function primarily at the bedside in less complex situations and provide additional care such as teaching patients how to maintain care after discharge.[7]

Faculty Shortage

Faculty recruitment problems are emerging nationally and in Hawaii. As the demand for nurses increases, the professors simply will not be there to educate the workforce on which the state and nation depend. We are facing serious barriers to attracting the faculty we need.

Tight budgets have allowed only modest increases in nursing faculty earnings. Full-time nursing professors at four-year colleges and universities earned $66,132 in the 1998-99 academic year, up 2.7% over 1997-98. The salary of a middle range full professor at the University of Hawaii is $64,872. Average salaries for UH Manoa Nursing faculty are $35,160 for instructors, $41,768 for assistant professors, $58,186 for associate professors, and $74,300 for professors. According to College and University Personnel Committees, assistant and associate level faculty pay tallied fairly evenly with other disciplines while full professors trailed, especially at private institutions. This makes recruitment very difficult in light of the fact that cost of living in Hawaii is about 30% more.

The American Association of Colleges of Nursing reports many faculty are opting for early retirement packages or resigning for greener clinical or administrative positions.[8] Some schools are supplementing faculty practice plans or share salaries throughout appointments with clinical agencies.

In 1998, 411 people graduated from doctoral programs in nursing.[5] Only 43% had an employment commitment to serve as nursing school faculty. Seventeen percent accepted non-academic positions. Filling faculty posts has become a problem. Many candidates do not have a program of research defined or they lack teaching skills. Others know research is the name of the game and do not want to teach.

Faculty life presents a harder road than private practice or administration. Clinical faculty in particular have long arduous working

hours. Increased patient acuity has decreased the number of nursing students that can be safely accommodated in a clinical setting. Faculty may be responsible for 10-14 patients as well as their 8 - 10 students in a complex clinical area.

Quality and accreditation requires faculty have at least a degree higher than their students. The new PhD in Nursing Program, now funded by the Division of Nursing, is a substantive, coordinated effort to increase the number of doctorally prepared nurses who also are prepared for an academic career.

Strategies Used by the University of Hawaii School of Nursing

Economic Leverage

The School of Nursing has generated more than $2.4 million in research and training grants. The amount of extramural funds generated by the School have increased by more than 600% over the past three years. All graduates get jobs and pay taxes supporting the economy of the State. Most graduates remain in the state. Nurses in primary care roles have demonstrated the ability to achieve quality primary care outcomes at lower cost. Advanced practice nurses are the least expensive primary care provider to educate.

Research Contribution

Nurses in PhD programs are the only health discipline specifically educated to do clinical research with human subjects. Nurses have the potential to develop evidence-based practices and reduce waste in the delivery system. Nurses also monitor quality of health care services.

Service Contribution

Numerous activities occur within the School of Nursing that provide service to the community. Health outreach education is provided for example through Dr. Wang's clinic in China Town for diabetic patients. Care is also provided for the elderly through special programs, clinics and partnerships. Complementary care is offered through the Healing Center at the School of Nursing. Community-based education is the basis of the curriculum and all students learn within community sites addressing the needs of the diverse population in the State. Diabetes management is provided through numerous service and research projects. Dr. Kadohiro has a leadership role in the American Association of Diabetes Educators. Faculty also serve as Pro Bono primary care providers in community health centers. Faculty and students provide health education for students and the community. Health screening is also provided for children through the Keiki Gold project. All levels of programs are delivered using distance delivery methods to neighbor islands. Faculty are funded through the Community Initiative on Nursing to conduct nursing workforce analysis and forecasting studies for the entire State.

Conclusion

Numerous challenges remain to assure that the State's demand for social work, dental hygiene, and nursing professionals is met. As health care needs of our residents and health care systems change, it is imperative that the State's educational systems are ready to meet the challenge. Economic resources are well invested in these programs which assure health and safety of the public and maintain our quality of life.

References

1. U.S. News Online. (March 1998) *America's Best Graduate Schools*. [online]. Available from: URL: http://www.usnews.com.usnews/edu/beyond/bcrank.htm.
2. National Advisory Council on Nurse Education and Practice. (October 1996). *Report to the Secretary of the Department of Health and Human Services on the Basic Registered Nurse Workforce* [REPORT TO THE SECRETARY], pp. 16, 48, 53. Washington, DC: U.S. Department of Health and Human Services, Division of Nursing.
3. Community Initiative on Nursing of Hawai_i. (1997). *A Survey of Individual Nurses: Hawai_i Nursing Workforce Demand Questionnaire*. Honolulu, HI: Author.
4. Division of Nursing. (March 1996). *The Registered Nurse Population: Findings from the National Sample Survey of Registered Nurses* [RN SAMPLE SURVEY], pp. 8-33 Washington, DC: U.S. Department of Health and Human Services, Bureau of Health Professions.
5. Pew Health Professions Commission. (November 1995). *Critical Challenges: Revitalizing the Health Professions for the Twenty-First Century*, p. 51. San Francisco, University of California - San Francisco, Center for the Health Professions.
6. Hawaii State Board of Nursing. (1999). Personal communication.
7. American Association of Colleges of Nursing. (1995). *A Model for Differentiated Nursing Practice*, pp. 26-29. Washington, DC: Author.
8. American Association of Colleges of Nursing. (1999). *1998-1999 Enrollment and Graduations in Baccalaureate and Graduate Programs in Nursing*, p.12. Washington, DC: Author.

Why We Need Laws to Protect Patients from Their Health Plan

Richard S. Miller
Professor of Law Emeritus,
The William S. Richardson School of Law,
University of Hawaii at Manoa
Legal Consultant to Hawaii Coalition For Health

The Hawaii Coalition for Health knows that members of the health industry are continuously interacting with members of the Legislature, building good will, and putting forth their views of what the world of regulation should or should not include. Unfortunately, few on the consumer side have the resources or bodies to put forth such time and effort, and most of what we do in the Hawaii Coalition for Health is either unpaid or poorly paid. We are essentially volunteers. Furthermore, while we share wide agreement with health care providers about the problems of managed care, our loyalty is to the health care consumer and not to the physician. The vast majority of our members are patients, not professionals, and the dues of these ordinary people are negligible. They, however, are the Legislature's primary constituents.

Here is why patient-protective legislation is important:

1. Several years ago, the Legislative Reference Bureau studied the status of Hawaii's health care system and reported that competition was healthy. Unfortunately, the situation has changed dramatically since then. Today, competition is not working in Hawai'i to provide the best choices of health insurance for health care consumers. For all practical purposes, the competition that does exist is only between HMSA and Kaiser, and it manifests itself in efforts by HMSA to reduce the "bottom line" in order to reduce premiums to employers. If HMSA is successful in this competition, it could force Kaiser out of business. Then HMSA will really have a monopoly of health care business as well as a "monopsony" - - the only buyer of providers' services left in Hawaii — and HMSA will

no longer have an incentive to keep costs down.

2. HMSA has become, for all practical purposes, the only buyer of physicians' services in Hawaii because Kaiser employs its physicians on a full-time basis. If a non-Kaiser physician cannot work for HMSA, she or he cannot make a living in Hawaii. HMSA is therefore free to, and in fact does, dictate terms to its participating providers. Hawaii's physicians, in return, are coerced into accepting HMSA's terms even though , in large measure, HMSA seeks to substitute, in cases that matter, its own treatment decisions for the participating physician's, and even though reimbursements for important services are all too often wholly inadequate. For the most part, HMSA's participating physicians don't speak out because they are intimidated to remain silent.

3. Health plans employ various means to ration health care by creating disincentives for physicians to treat patients. Inadequate reimbursements, for example, for certain vaccines or for lengthy and complex office visits is one form of disincentive. A more insidious form of disincentive is a gainsharing program. Under gainsharing, health plans maintain treatment profiles of physicians and reward physicians with cash for treating patients less and for limiting advocacy on behalf of the physician's own patients. HMSA claims its gainsharing programs merely reward good physician practices.

4. The Board of Directors of HMSA, a tax-exempt mutual benefit society, has already demonstrated its disdain for its membership. Last year, on short notice, and with full knowledge that many Hawaii physicians were attending a conference on Kaua'i, the Board called a special meeting to be held the day before Election Day. The Board loaded the meeting with HMSA employees and HMSA members who worked for firms friendly to HMSA. At the meeting, those present voted to change the number of member signatures necessary to call a special meeting from 100 to 3% of the membership, about 18,000 signatures! They also significantly reduced the power of members to name directors.

Hawaii's consumers are thus faced with:

1. An all-powerful, tax-exempt, so-called mutual benefit society

2. that virtually monopolizes the Preferred Provider Organizations (PPOs) and is almost the only buyer of physicians' PPO services in this State;

3. whose board is insulated from member action because of changes made to its bylaws;

4. that cannot, by virtue of ERISA, be sued by its members in ways that the normal insurer can be sued by its policyholders or third parties, i.e. for bad faith refusal to settle or pay, or for general or punitive damages;

5. that by statute sets the criteria for other health plans under Hawaii's Prepaid Health Insurance Act

6. that is subject to only the most minimal of scrutiny and supervision by the Department of Labor; and

7. That has intimidated its participating physicians into abject silence and acceptance of inadequate compensation, with no right to appeal maximum allowable charges, and a contract that places ultimate power to determine what is appropriate treatment in the hands of HMSA directors whose primary duties are to the health plan and not to the patients.

If this situation does not require active state supervision and regulation, I don't know what does.

Universal Single Payer Health Plan — Answer to our Dilemma?

Ah Quon McElrath
Member, University of Hawaii Board of Regents

The irony of being the richest industrial nation is that the United States is without a coherent, comprehensive, universal health care plan for its 275 million residents. The result is 44.3 million residents without health care and over six million underinsured despite a still strong economy and low unemployment, inflation, and interest rates.

The increasing numbers of individuals without health care occur with the downsizing and merging of companies which result in huge layoffs of workers and the changing nature of work which has increased the numbers of part-time, contractual, and consulting workers who generally do not receive the benefits that regular full-time workers receive. Furthermore, there has been a decrease of unionized workers whose collective bargaining agreements usually provide health care.

For laid-off workers and those with pre-existing conditions, the 1985 Consolidated Omnibus budget Reconciliation Act (COBRA) and the 1996 Health Insurance Portability and Accountability Act (Kennedy/Kassebaum), respectively, have not been effectively helpful in the continuation of health care because premiums have been prohibitively high and include provisions that present difficulties with compliance and administration. For recipients of public payments and new immigrants, the effect of the 1996 Personal Responsibility and Work Opportunity Reconciliation Act (welfare reform) on continued Medicaid eligibility is murky.

Congress has skirted around the issue of providing health care for all Americans. What has been provided has been incremental and accretional and targeted towards specific population groups—the aged, disabled, and poor; ethnic groups such as the American Indians and Hawaiians; the military and veterans; individuals with named health conditions; and often only as a response to strong pressure from affected groups.

When the Social Security Act was promulgated in 1935, health care was not seriously considered since the effects of the depression were perceived primarily as an economic problem with its 16 million unemployed, closure of factories, breadlines, and massive dislocation of families who could not meet rental or mortgage payments. Policy makers did not think that congressional support for health care could be galvanized.

Following World War II, an attempt was made by the Truman administration to pass a national health insurance program. However, the organized resistance of the medical profession and hospitals with cries of "socialized medicine" doomed the attempt.

Discussion about health care lay dormant until the "great society" period of President Johnson. In 1965 amendments to the Social Security Act resulted in Medicare (Title XVIII) and Medicaid (title XIX). Medicare provides health care for the aged and the disabled and is funded through an employee/employer payroll tax (Part A-hospitalization) and a monthly premium and general revenues (Part B-medical services). Benefits do not include out-patient prescription drugs (with a few exceptions) or long-term institutional care (except after a 3-day hospital episode), both of which account for huge expenditures by the elderly themselves. Medicaid, for public assistance recipients and other income eligible individuals, is funded by states and the federal government under a federal matching device known as the Federal Medical Assistance Percentage (FMAP). FAMP is determined annually on a comparison between a state's average per capita income and the national average with a federal match not lower than 50 per cent nor higher than 83 per cent for every dollar spent for benefits. (Hawaii now receives 52 per cent in FMAP, although it was 50 per cent for many years.) Medicaid is a complex and complicated program with its system of basic and optional benefits and varying eligibility requirements.

In 1972 Congress combined the public assistance titles of the Social Security Act-Old Age Assistance (OAA), Aid to the Blind (AB), and Aid to the Permanently and Totally Disabled (APTD – into the supplemental Security Income Act (SSI), with complete federal funding. One of the options under this program was automatic eligibility for Medicaid, for which most of the states opted. Hawaii was not one of those states, citing its generous public assistance and Medicaid program as the reason for not so choosing.

In the early 1970s a bill to promote the formation of health maintenance organizations (HMOs) was enacted under the Nixon administration and largely prompted by Minnesota adherents of the idea, which already had its reality in the Kaiser plan, HIP of New York City, and the Group Health Plan of Puget Sound. The concept was not embraced wholeheartedly until the 80s, when insurance companies, under the rubric of "managed care," saw HMOs as a way by which money could be made. Thereafter, these companies purchased clinics, hospitals, laboratory facilities, and even mortuaries and cemetery plots. They promoted their for-profit HMOs as a good investment for investors and their highly paid CEOs.

"Managed care" took the medical profession and patients out of making health care decisions, especially those which affected the profit margin of HMOs.

Interestingly, market economics or making a profit, has affected the behavior of the traditional "blues" as well as the not-for-profit HMOs in the way they run their operations.

For a short period, "managed care" for government programs like Medicare & Medicaid and Private industry plans kept health care costs fairly stable, but there are signs that costs are beginning to rise. In 1999, over 4,000,000 Medical beneficiaries lost "managed care" coverage when insurance companies began "losing" money. Employer groups, now faced with the rising costs of providing care for their employees, have begun the cycle of increasing employee premium contributions, instituting caps, cutting benefits, and eliminating dependent coverage.

In 1975 legislation for national health planning and resources included the issuance of certificates of need for the acquisition of technology, changes in services, and the building and renovation of facilities such as hospitals and nursing homes. Certificates of Need were thought to be the answer to rising costs, promoting quality, and improving access to care.

In 1994 the Clinton administration attempted to increase coverage and community participation in health care. The attempt failed, despite leaving insurance companies as the principal player in health care, in the morass of an over 1,000 page bill which few took the time to read, let alone understand.

Thus, the health care landscape is littered with many make-shift attempts to contain costs, increase accessibility, and insure quality. There are the likes of Certificates of Need, Diagnosis Related Groups (DRGs), participating physicians (PARs), Qualified Medicare Beneficiaries (QMBs), Specified Low Income Medicare Beneficiaries (SLMBs), Children's Health Insurance Program (CHIP), and other acronyms long forgotten.

There are hundreds of health care plans for public and private workers and their families sold by large and small insurance companies. Health care exists in Workers' Compensation, automobile insurance, homeowners comprehensive insurance, and individually purchased plans. Cost of these plans are usually borne by premiums paid by employers, employees, government entities, or by the individuals.

Coverage is spotty. Some plans provide coverage for the entire family, others only the employed member, others cover dependent at an employee's sole cost, such as Hawaii's 1974 Prepaid Health Care Act. Hawaii, the only state to have such a plan, is exempted from the preemption clause of the Employee Retirement Security Income Act (Erisa) by a congressional act after a successful court challenge by a local oil company. Benefits range from the adequate to the inadequate, with or without caps, deductibles, or co-payments. Most of the plans provide curative care, but few provide preventive care.

It is unlikely that Congress will soon enact a universal health plan to cover all residents of the United States, even though it would be a relatively easy conversion of either Medicare or Medicaid with the federal government's being the single payer.

Under this circumstance, individual states can become truly innovative about how they provide health care for all of their residents.

States can use the age-old concept of states' right, or devolution, as it is euphemistically called, to create their own universal single payer program.

There would be no difficulty in devising a universal single payer plan. There are many models already in existence, including that of the Canadian government whose experience, by and large, has resulted in a high degree of patient satisfaction.

The benefits of a universal single payer program have motivated a number of states and organizations to consider seriously legislation for such a program. Prominent among these are California, Maryland, Massachusetts, and Ohio and Physicians for a National Health Plan, Universal Health Care in Ohio.

The advantages of a universal Health plan are many. They include:

• Coverage of all residents of a state, without the need to administer the fine points of eligibility as for example, in Medicaid.

• Elimination of unnecessary paper work by placing administration in a single agency.

• Uniformity of benefits to insure equality of treatment.

• Uniformity of payments to all health care providers, either on a fee-for-service or capitation basis, with geographic and practice variations.

• Creation of review bodies to assess payment structures, quality of service, distribution of care, acquisition of technology, changes in services, capital investment and improvements, etc.

• Assessment of financing mechanisms which could include payments by the federal government based on past expenditures in Medicare and Medicaid with increases according to the medical practice index; inclusion of health care provisions under workers compensation, auto insurance, homeowners insurance as incentives to business and industry to get out of the health care business; revisions of the tax code to finance health care, with consolidation of the numerous business taxes into one amount to take care of lost wages under workers compensation, temporary disability, and unemployment insurance.

Hawaii cannot continue to temporize. Our population is growing older and living longer; we have 4,000 to 10,000 new immigrants who come to this state every year; we have populations that need care, particularly the Hawaiians whose statistics on health care represent a shame of negligence. There are new methods of treatment presaged by discoveries in genetic manipulation and technology.

We cannot leave health care to market economics and its cover of profit making via competition. Health care for all residents does not belong in the competitive arena. It belongs in the area of providing equal care to all who need care.

Let the discussions begin on the merits of a universal single payer health plan to achieve this equality.



HAWAII POISON CENTER

OAHU: 941-4411

NEIGHBOR ISLANDS TOLL-FREE:

1-800-362-3585

Free Hotline 24 Hours a Day.

POISON CENTER TIPS

- Keep the number of the Hawaii Poison Center on or near your telephone.
- If you suspect a poisoning, do not wait for signs and symptoms to develop. Call the Hawaii Poison Center immediately.
- Always keep Ipecac Syrup in your home. (This is used to make a person vomit in certain types of poisoning.) **Do not use Ipecac Syrup unless advised by the Hawaii Poison Center.**
- Store all medicines, chemicals, and household products out of reach and out of sight, preferably locked up.
- A good rule to teach children is to "always ask first" before eating or drinking anything—don't touch, don't smell, don't taste.

Donate to help us save lives.

Mail checks, payable to:

Hawaii Poison Center

1319 Punahou Street, Honolulu, HI 96826

No-Fault – We've All Been Shortchanged

Hawaii Physicians Have All Been Mailed A Copy Of The Letter Below



HAWAII PROVIDERS NETWORK, INC.

An Organization Established to Bring Justice to the Health-Care Industry

2101 Nuuanu Avenue, Suite 1201
Honolulu, HI 96817
Phone and Fax 808-566-6665

January 19, 2000

Dear Doctor,

You have not received the No-Fault reimbursements that you are entitled to. The following is what has occurred regarding your M.D. reimbursement from 1995 to today. In early 1995, M.D. reimbursement in No-Fault used the Workers' Compensation Fee Schedule, also called Title 12 Chapter 13, or the "The Green Book". The reimbursement was approximately:

Office visit	1995
Brief, 10 minutes	$57.02
Intermediate, 25 minutes	$137.52
Complex, 30 minutes	$194.54

From August 1995 to the present, the insurance carriers have insisted that providers bill, and have only paid:

Office visit	8/95-12/97	01/96-12/97	01/98-Present
Brief, 10 minutes	$28.73	$30.39	$26.36
Inter, 25 minutes	$63.36	$65.09	$58.63
Complex, 30 minutes	$98.41	$102.80	$92.48

The Hawaii Providers Network Lawsuit demands you be reimbursed for your services at the rate you were in early 1995 for care provided from August 1995 to the present, no matter what you had already billed and no matter what you have already been paid. The lawsuit demands you now be paid the difference because the No-Fault law requires reimbursement for all of this time as specified in Title 12 Chapter 13.

Since we mailed you our original letter, over 600 providers have signed up. We still have the opportunity to amend our Complaint to state claims on behalf of additional providers. We urge you to sign up now in order to take advantage of this opportunity. If you wait any longer to join with us the opportunity to participate may no longer be available. You must sign the contract to be eligible for and get the recovery.

If you have any questions, now or at any time about the project, please call me at 566-6665 or email me at justice@hawaiiproviders.com.

Sincerely,

Nicholas S. Nagel
President

This Is Very Important And We Urge You To Read The Letter And Respond To Hawaii Providers Network Immediately

Mammograms

Not just once, but for a lifetime

The National Cancer Institute has free booklets about breast cancer screening. To order these publications, call NCI's Cancer Information Service at **1-800-4-CANCER** (1-800-422-6237). Persons with TTY equipment, dial 1-800-332-8615.

http://rex.nci.nih.gov

Janssen Pharmaceutica

Is proud to support the Hawaii Medical Journal

World leader in antimycotic research

JANSSEN • PHARMACEUTICA • • RESEARCH FOUNDATION •

Titusville, NJ 08560-0200

®1998 Janssen Pharmaceutica

Aloha Laboratories

...when results counts

A CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

- **Surgical Pathology**
- **Dermatopathology**
- **Cytopathology**
- **Gynecologic Pathology**
- **Frozen Sections**

David M. Amberger, M.D.
Laboratory Director

2036 Hau Street, Honolulu, HI 96819
Phone (808)842-6600
Fax (808)848-0663
ALOHALABS@WORLDNET.ATT.NET

Arleen D. Jouxson, Esq.
Attorney at Law



A.K.A. Arlene Meyers, MD, MPH

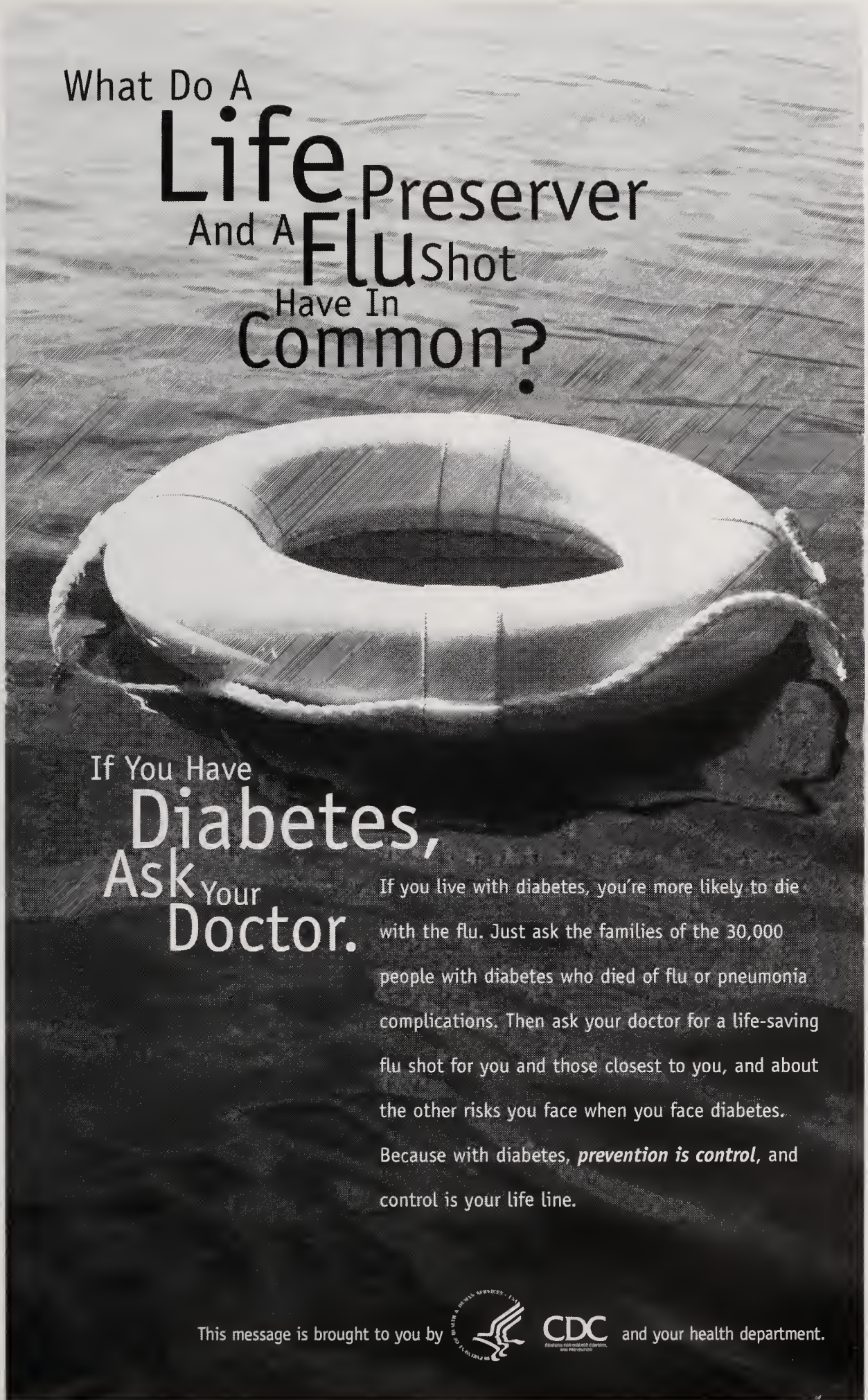
- **Wahiawa pediatrician since 1979**
- **Associate Clinical Professor, JABSOM**
- **1998 Roscoe Pound award winner in health care law**
- **President & founder of the Hawaii Coalition For Health**

NEED HELP?

- **with Par. Agreements?**
- **Understanding health care laws?**
- **Resolving disputes with health insurers?**

CALL 621-8806 (Oahu) for more information or for a free initial consultation at your place of business.

302 California Ave., #209, Wahiawa, HI 96786, Ph: 621-8806; Fax: 622-5599


What Do A
Life Preserver
And A Flu Shot
Have In
Common?
If You Have
Diabetes,
Ask Your
Doctor.
If you live with diabetes, you're more likely to die with the flu. Just ask the families of the 30,000 people with diabetes who died of flu or pneumonia complications. Then ask your doctor for a life-saving flu shot for you and those closest to you, and about the other risks you face when you face diabetes. Because with diabetes, ***prevention is control,*** and control is your life line.
This message is brought to you by
CDC
and your health department.

If you think your chance of getting breast cancer is one in a million, the fact is,



it's one in nine.

Over their lifetimes, one out of every nine women will be faced with breast cancer. That's one out of nine friends. One out of nine sisters, mothers, daughters. It's a statistic you can't afford to ignore. And mammography is a weapon you can't afford to be without. A mammogram can detect breast cancer in its earliest stages, when it's most curable. It's not enough to simply know the statistics. You have to fight back. Get a mammogram.

Mammography.
Your most powerful weapon.

THERE'S NOTHING MIGHTIER THAN THE SWORD
AMERICAN CANCER SOCIETY®

1-800-ACS-2345

© 1991 American Cancer Society

Classified Notices

To place a classified notice:

HMA members.–Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.

Nonmembers.–Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Office Space

Ala Moana Bldg.– PHYSICIANS WANTED to share space and support services. Interest in physical rehab. preferred. We have flexible rental arrangements starting at one half-day per week . Run your practice with no fixed overhead. Contact Dr. Speers, REHABILITATION ASSOCIATES, 955-7244.

Locum Tenens

BOARD CERTIFIED FAMILY PRACTICE.– 15+ years caring clinical experience in Hawaii. Office coverage for 1/2 days, own MIEC Policy, fee flexible, call anytime Deborah C. Love MD: Home Oahu: (808) 637-8611; Cell Ph: 295-2770.

Physician Wanted

PRIMARY CARE INTERNIST FOR KAUAI.– SEEKING A BC/BE PRIMARY CARE INTERNIST; interests in rheumatology, infectious diseases and geriatrics are welcome. Kauai Medical Clinic is a 60-physician multispecialty medical group affiliated with Wilcox Health System's 185-bed community hospital. Excellent quality of life in a safe, beautiful, family oriented rural community. Competitive salary, benefits and relocation package. Send/fax CV to: M. Keyes-Saiki, Kauai Medical Clinic, 3-3420 Kuhio Highway, Suite B, Lihue, HI, 96766-1098. Fax (808) 246-1625. E-mail: mkeyes-saiki@wilcoxhealth.org

For Sale/Rent

HILO, BIG ISLAND.– FOR SALE OR RENT for doctors or dentists. Renovated doctor's office. Ponahawai Medical Center (Ka Waena Lapa'Au). 670 Ponahawai, #207 (806 sq. ft.) or 207 & 205 (1600 sq. ft.). Call 935-4533 or 959-7575.

Join us in the quest for continued medical excellence.



Join your Straub colleagues as we strive for continuing medical excellence.

Straub Clinic & Hospital, Inc. is accredited by the Hawaii Medical Association to sponsor continuing medical education for physicians.

Straub designates this educational activity for a maximum of one credit hour in Category 1 of the Physician's Recognition Award of the American Medical Association. Each physician should claim only those hours of credit that he/she actually spent in the educational activity.

Straub

Partners in health

*straub*health.com

You are invited to attend...

– Friday Noon Conference –

Vision for a "New" Medical School

Edwin C. Cadman, MD

March 3, 2000
12:30 – 1:30 p.m.
Doctor's Dining Room

Learning Objectives

At the conclusion, participants will be able to:

- Describe the restructuring plans for the medical school.
- Gain knowledge about the vision of the medical school.
- Summarize the goals and objectives of the "new" medical school.

– Friday Noon Conference –
Luncheon

Antithrombotic Therapy Update and Review of the 1998 ACCP Consensus Conference

James E. Dalen, MD, MPH

March 10, 2000
12:30 - 1:30 p.m.
Doctors Dining Room

Learning Objectives

At the conclusion, participants will be able to:

- Describe the process by which the American College of Chest Physicians develops consensus statements.
- Identify evolving indications for low molecular weight heparin in coronary disease states.
- Discuss new developments in antiplatelet therapy – agents and dosing.

We would like to acknowledge the Educational Grant from DuPont Pharmaceuticals Company.

Please call Fran Smith at 522-4471 for more information.

The Weathervane Russell T. Stodd MD

Life is Tough. Three Out Of Three People Die, So Shut Up And Deal.

Despite the atrocious and abusive power of the Health Care Financing Administration, and despite the obstructive and manipulative mechanisms of Hawaii's Blues organization ("members" my Aunt Fanny - it's a money-making insurance company in every sense), and despite the weevils in our own ranks who cozy up to medical pretenders for personal gain, the Hawaii Ophthalmological Society remains a strong and vibrant organization to carry into the next century. Yes, of course the actual new century doesn't begin until next year, but writing triple zeros automatically makes us all think of the 21st century.

Nobody Wants To Be A Snitch.

In a turnabout from the previous AMA House of Delegates, at the December interim session the House decided to make policy that doctors are to be policemen. The Council on Ethical and Judicial Affairs was supported in their recommendation that doctors report patients with medical problems to the motor vehicle authority if the physician feels that driver is unsafe on the road. Without doubt the doctor has a duty to so advise the patient, and perhaps also the next of kin, but to reveal privileged medical information to any third party without the patient's knowledge and consent goes beyond the practice of medicine. Additionally, there are already many unlicensed drivers on the road (frequently driving under the influence), so simply removing the license will hardly deter anyone who fails to respond to the doctor's direct advice.

In Any Given Set Of Circumstances, The Proper Course Is Determined By Subsequent Events.

Blame it on previous contact lens use for disrupting corneal epithelium, or perhaps hormonal changes with menopause, or possibly use of birth control pills or use of topical medications, whatever, the point is that the LASIK (laser in situ keratomileusis) parade is being rained on by the postoperative dry eye problem. Other theories include damage to the cilia and an affect on mucous layer of the tear film, or cutting the nerves of the central cornea with loss of corneal sensation affecting the tear secretion. The problem of the dry eye is emerging with increasing frequency following LASIK and making patients very unhappy. Vigorous treatment is often necessary with punctal plugs and non-preserved artificial tears.

Just Because Your Doctor Has A Name For Your Condition Doesn't Mean He Knows What It Is.

Senator John McCain of Arizona is running for the Republican nomination for president in the fall of 2000. He suffered nearly fatal injuries and disease during the Viet Nam war, when he endured six years of incarceration as a POW. Now there is a whispering campaign saying he is mentally unfit for the office. To refute the gossip-mongers, Senator McCain has released his entire medical record. Claire Dixon-Lee of the American Health Information Management Assn. has stated that that should not be necessary, and candidates for presidency should not be expected to provide information beyond what is pertinent for the office. "The American public needs to understand the importance of maintaining an individual's right to privacy, and of protecting the confidentiality of his or her health information." Well, yes, that was the rule in days gone by, but the media of today believes it is their duty to poke through every candidate's underwear on the road to Pennsylvania Avenue.

Knowledge Of The World Is Acquired In The World, Not In The Closet.

Congress established a sustainable growth rate (SGR) to determine the Medicare conversion factor based upon projected rather than actual data. Then, it is up to the Secretary of Health and Human Services, Donna Shalala, to exercise her authority to correct the factor when the real data comes in. Now the American Medical Association has filed a lawsuit charging Ms. Shalala with failing to use actual values and this has cost physicians $3 billion a year for 1998 and 1999. In October 1997, HCFA indicated that it would correct the SGR for 1998 and future years, updating with actual data rather than projections. Subsequently, without seeking public comments, HCFA reversed its decision! Meanwhile, many medical practices are failing, management companies are going broke, and hospitals are struggling for survival. The sad part is that a law suit must be brought in to make the government fulfill what is fair and what has been promised.

Eagles May Soar, But Weasels Don't Get Sucked Into Jet Engines.

What was once a rare event, has become a hazard for air travelers and airlines. In the air and on the ground, unruly passengers are a growing problem. The number of cases of passengers interfering with flight crews in 1997 was double the number in 1991, according to the Federal Aviation Administration. The Association of Flight Attendants, which represents more than 44,000 attendants at 24 airlines, claims those cases are probably only the tip of the iceberg because many incidents are not prosecuted. With the crowded cabin seating, the increase in sold out flights, bumping and rescheduling, plus so many passengers carrying bags into the airplane rather than checking luggage, passengers are often short tempered, frustrated, impatient and angry. On July 22, a 50 year old Continental Airlines gate agent, suffered a broken neck after being thrown head first to the floor by a 29 year old man, who was trying to board the jetway without a gate pass. Continental is pushing for aggressive prosecution. Senators Bill Frist (R. Tenn.) and Harry Reid (D. Nev.) introduced a bill that would raise the civil penalty for assaulting airline crew members or interfering with duties to $25,000 from $1,100.

Looking For Fraud In All The Wrong Places.

As was described on this page recently, the American Association of Retired People and Medicare have recruited volunteers to establish "senior patrols" to recoup the ostensible zillions of dollars of fraud lost to those cheating doctors. Now we are informed that this fruitless effort has resulted in a 50% increase in the number of complaints about Medicare bills in just the past six months. However, according to the same report, so far those complaints have not led to any increase in recouped Medicare funds! Come on, Donna Shalala, stop looking for sharks in the wading pool.

Managed Care Sucks - But It's A Great Export!

Like tobacco, managed care has become an ugly commodity in the USA, but many foreign medical leaders are finding it works in their countries. Some major U.S. insurers are investing in health companies around the world, and American consultants are pitching the managed care concept for various government systems. Managed care is already well established in Israel, Brazil, Switzerland and the Philippines, and is growing fast in Indonesia, Mexico, South Africa, Poland, India and Chile. Hossam Badrawi, who founded Egypt's first HMO nine years ago, claimed he looked worldwide and found the U.S. managed care model the best. Interestingly, the phrase *managed care* is never applied. Wherever the system is introduced euphemisms are used - "evidence-based medicine" or "sickness funds" or "clinical guidelines." The news media have beamed stories about America's growing hostility with the system, so the phrase is a no-no.

In Our Play We Reveal What Kind Of People We Are.

A research ecologist at the Department of the Interior said that the practice of "toad licking" as a means of achieving an hallucinogenic "high" is on the decline. Users (lickers) found the presence of poisonous chemical compounds in the toad venom. However, it was reported that "toad smoking," on the other hand, seems to be less risky and is on the rise. Come on, baby, light my toad.

ADDENDA

❖Horses can look backward with one eye and forward with the other eye at the same time.

❖The most powerful laser devised is at the Lawrence Livermore Lab in California. A single pulse has been measured at 1.3 quadrillion watts.

❖Number of cars in New York City 1.7 million; number of handguns 1.7 million!

❖Rock music is against the law in Venetian gondolas.

❖Crooked judges live on fixed income.

Aloha and keep the faith —rts■

One of a kind.



Unmistakable.

At MIEC, we know what it means to stand out in the crowd. Twenty-five years ago, we started the West's first doctor-owned, not-for-profit malpractice insurance company. The idea quickly caught on, and now there are dozens of "doctor-owned" companies throughout the country.

But there is only one MIEC. Our rate and dividend history is unparalleled. Guess that's why we don't need a large sales or marketing staff. Our track record speaks for itself.

The original is still the best. Call us.

Medical Insurance Exchange of California
6250 Claremont Avenue, Oakland, California 94618
Telephone 800-227-4527 www.miec.com
HAWAII CLAIMS OFFICE: 1360 South Beretania Street, Honolulu, Hawaii 96814

Our 25th Anniversary, 1975–2000

Sponsored by Hawaii Medical Association

www.maximahawaii.com



Hawaii medical journal
v. 59
no. 2
February 2000
Received on: 03-17-2000
Brown University Library
SCI

SASS.
WITH CLASS.

NISSAN

DRIVEN.

New City Nissan - Ala Moana 524-9111 • Tony Nissan - West Oahu 671-2611 (Waipahu) • Tony Nissan - Pearl City 487-1133
Infiniti - Nissan Motor Sales - Honolulu 836-0848 (Airport) • King Windward Nissan - Kaneohe 235-6433
Cutter Nissan of Maui - Kahului 877-9009 • Kauai Nissan - Lihue 245-6731 • Kamaaina Nissan - Hilo 935-3741 • Kona Auto Center - Kona 329-4408

HAWAII MEDICAL JOURNAL

March 2000 Volume 59, No. 3 ISSN: 0017-8594

WZ
HI5
H45a
SCL



PAIN

Special Issue on Pain

HAWAII MEDICAL ASSOCIATION 1856



For Commercial HMO

"Excellent"

The National Committee for Quality Assurance (NCQA) has designated ***Health Plan Hawaii's*** *commercial HMO as one of an elite group of health plans to earn its new "Excellent" accreditation status.*

This distinction—shared by only 40 plans nationwide—is awarded on the basis of each plan's commitment to clinical excellence, customer service and continuous improvement.

Needless to say, we couldn't have done it without the outstanding efforts of the more than 1,400 physicians participating with ***Health Plan Hawaii*** *health centers:*

OAHU
Central Medical Clinic
Central Oahu Physician Hospital Organization
Haleiwa Family Health Center
Hawaii Filipino HealthCare, Inc.
Hawaii IPA
Medical Arts Clinic, Inc.
Oahu Physicians Group
Pacific Health Care
Personal Care Network:
- Castle Health Group
- Kuakini Health Network
- St. Francis Physician Hospital Alliance

Straub Clinic & Hospital
The Honolulu Medical Group, Inc.
Waianae Coast Comprehensive Health Center

HAWAII
Bay/Hamakua Health Center
East Hawaii IPA
Hilo Medical Associates, Inc.
Kona IPA
North Hawaii Physicians Group, Inc.
Straub (Hilo & Kailua-Kona)
West Hawaii Physicians Group

KAUAI
Kauai Medical Associates
Kauai Medical Clinic

LANAI
Straub

MAUI
Hawaii IPA—Maui Physicians
The Maui Medical Group, Inc.

Health Plan Hawaii™

A Federally Qualified
HMO Affiliate of HMSA

At ***Health Plan Hawaii****, quality is at the heart of everything we do. Our heartfelt thanks to the participating health centers and physicians whose commitment to excellence sets the standard for quality care in our island community.*

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
Vincent S. Aoki MD, Benjamin W. Berg MD,
John Breinich MLS, Satoru Izutsu PhD,
James Lumeng MD, Douglas G. Massey MD,
Myron E. Shirasu MD, Frank L. Tabrah MD,
Alfred D. Morris MD

Journal Staff
Managing Editor: Becky Kendro
Editorial Assistant: Drake Chinen

Officers
President: James Lumeng MD
President-Elect: Philip Hellreich MD
Secretary: Gerald McKenna MD
Treasurer: Charles R. Kelley MD
Paul DeMare MD
Past President: Patricia L. Chinn MD

County Presidents
Hawaii: David Camacho MD
Honolulu: Walter K.W. Young MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Patrick Aiu MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 1999 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 84

Special Commentary
Don Purcell MD. 85

Book Review
Laura L. Post MD. 85

Medical School Hotline
Rebecca L. Cann PhD 87

The Patient's need to control his pain
A.A. Snyser 90

A Plan to Improve Pain Management for Dying Patients
Gary Rinzler MD, MPH (Recording Secretary),
Norman Goldstein MD, et al 91

Pain Management and Palliative Care in Hospice
Barbara Shirland RN, CRNH 92

Healing Touch
Hob Osterlund RN, MS, CHTP 94

Invasive Techniques Utilized in Chronic Pain Management
Jeffrey S. Wang MD 96

Pain Management: A Synopsis
Joseph Pepping PharmD 99

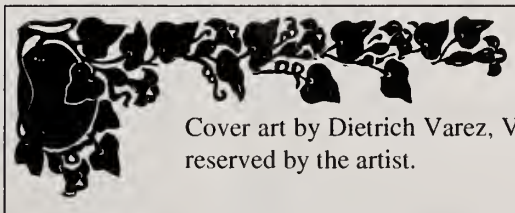
Pain Resource for the Hawaii Practitioner
Hob Osterlund RN, MS, CHTP 101

Pain Glossaary 103

News and Notes
Henry N. Yokoyama MD 107

Classified Notices 109

Weathervane
Russell T. Stodd MD 110



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

Pele, Hi'iaka and Lohiau

Perhaps the greatest example of pain, both mental and physical, in Hawaiian mythology was the rejection and burning of Lohiau by Pele. Hi'iaka, sister of Pele and skilled in the art of healing later restored Lohiau to Health.

Editorial

Norman Goldstein MD
Editor, Hawaii Medical Journal



It's Here! The Special Issue on Pain

It has taken more than two and a half years in preparation, but we finally have produced the Special Issue on Pain. The genesis of this issue began when Governor Cayetano appointed a Blue-Ribbon Panel on Living and Dying with Dignity.[1] As a member of that Panel and appointee to head a focus group on pain management with Dr. Max Botticelli, Emeritus Chief of the Department of Medicine at the John A. Burns School of Medicine, we conducted monthly meetings with our focus group members:

Lynn Dahl MD
Reginald Ho MD
Kathleen Kang-Kaulupali PharmD
Linda Landau RN
Gary Okamoto MD
Joseph Pepping PharmD
Gary Rinzler MD
John Stiller MD
Shawn Gafford PharmD
Patricia Kalua RN
Amy Kruger RN
Keith Kamida, Chief, NEA
Hob Osterlund, RN
Don Purcell MD
Barbara Shirland RN
Jon Streltzer MD
Jeff Wang MD

We set goals and objectives to develop the following:

- Measurable standards for pain management in the dying patient
- Mechanisms for monitoring compliance
- Recommendations for State executive action
- Recommendations for legislative action

The summary of our report to the Governor appears on page 91.

The Hawaii Pain Society

The Hawaii Pain Society is an organization of professionals interested in pain management and palliation. It is open to everyone, but according to founder and president, Don Purcell MD, membership is subject to approval.

The Society is also forming a patient support/educational program. Dues are set at $12 per year to help defray the cost of mailing a newsletter, "The Forum", and additional announcements.

Donations to further this educational program are also welcome. Interested readers can write to the Society for membership and further information.

Hawaii Pain Society
800 South Beretania Street, Suite 240,
Honolulu, Hawaii 96813

A Special Cover

Our cover for this Special Pain Issue, created by Big Island artist Dietrich Varez, is "Pele, Hi'iaka and Lohiau". According to Hawaiian mythology, this block print illustrates the highest level of mental and physical pain; the rejection and burning of Lohiau by Pele. Hi'iaka, sister of Pele, a kahuna skilled in the art of healing, later restored Lohiau to health.

Mahalo nui loa to Varez for dedicating his professional life to visually translating Hawaiian lore for future generations to appreciate.



The No-Pain Logo



Hob Osterlund, RN., M.S., C.H.T.P. contributed an initial article, Pain Relief as a Basic Human Right, which appeared in the August 1997 issue of the Journal.[2] (See her current articles on pages 94 and 101.)

Thanks to Osterlund, the clinical coordinator of The Queen's Pain Management Services, and to the Intravenous Therapy Specialist-Hawaii Inc. for producing the buttons, permission to publish their logo, and for relief of pain options available for today's physicians to prescribe when needed.

References

1. Goldstein N. Panel will study the right to Doctor-Assisted Aid-in-Dying, editorial HMJ 1997 January 56:5.
2. Osterlund H. HMJ 1997 56 (Aug) 199-200.

Special Commentary

Pain As A Paradigm

Don Purcell MD

Pain is an experience that reaches far beyond the symptom itself. Often, it has its own language by which those who are afflicted with it talk to us. If you listen carefully, and learn to read "between the lines" you will eventually reach a place beyond pain and enter the realm of suffering. This is where you need to go. If you are going to treat pain, then you must also address the suffering it brings. In my experience, neglecting this aspect of care will only take you part of the way. You have to complete the job.

When I approach an individual in pain I first ask myself "What are they really telling me?", "What is the underlying theme?" If you simply ask someone "Where does it hurt?", most people will point to one area or another and give you a very matter of fact answer. But if you ask them "How has this affected your life?", you will likely get a very different response. Some will say the pain won't allow them to do the things they did before... .the way it took things from them, the losses. Still others will lead you to a place far away from where you began, and tell you of things that happened long ago and are now all but forgotten. It is in these places that suffering has its origins. But it is also here that true healing can take place, thereby relieving pain at its root source.

Because the experience of pain can be many faceted, we often call upon an interdisciplinary team of specialists from different fields to address the physical, emotional, social, cultural and spiritual aspects of its treatment. Likewise, if we are to approach a community model that addresses this concern, then we must first allow for better collaboration between the professions at all levels of healthcare. This may take the form of a permanent, standing, interdisciplinary pain council that allows for free exchange of ideas, as well as a forum for conjointly-sponsored community educational endeavors. In this way, we may be able to realize a broader scope of care for those in pain by addressing its many aspects from the vantage point of a number of different disciplines.

And so, pain is a paradigm; a model for something that it represents on a deeper level. Like a many sided gem, we can see into the center from a number of places if we just take the time to go beyond its surface; a process that begs our commitment to work together to alleviate the suffering that it brings.

Editor's Note:

Don Purcell MD, is an internist who specializes in pain management. He recently organized a very comprehensive Pacific Pain Symposium sponsored by the Dannemiller Medical Education Foundation, Hospice Hawaii at Home, and his Regency Pain Center.

The meeting, held at the Hawaii Convention Center September 17-19, 1999, was very well attended by physicians representing many specialties (even a dermatologist), general practitioners, nurses and other health care providers.

Mahalo, Don, for your efforts to educate us about pain management, and for your paradigm.

Norman Goldstein MD, Editor

Book Review

"Handbook of Pain Management,"

edited by C. David Tollison, John R. Satterthwaite, and Joseph W. Tollison, Second Edition, Williams & Wilkins, Baltimore, Maryland, 1994, 779 pages, cloth, ISBN 0-683-08332-5.

Laura L. Post MD

In the field of health care, the management of pain has become an exploding arena of diagnostic techniques, treatment research, and burgeoning hypotheses in search of comprehensive multidisciplinary care. Drawing upon numerous of the basic sciences (anatomy, physiology, biochemistry) and clinical disciplines (anesthesia/surgery, psychiatry/neurology, family medicine), Pain Management is a specialty which requires both global knowledge and the specific awareness of the unique patient's situation and experience. It is no coincidence that, in the past six months, I have been asked to review three separate and unrelated books each in some way addressing the origins of pain, its dynamics and sequelae.

Attempting to provide a reasonable basis for addressing problems in the management of pain of patients, this volume chooses a pragmatic approach while maintaining rigorous academic standards. The great number of contributors (nearly 90), spanning theoretical disciplines and orientations, diverse geographies, and transcending medical and non-medical fields attests to the consciousness with which the editors approached this subject. Interestingly a reference of this magnitude even necessitated three of those editor-type individuals who each helped to shape and determine the contents of the final product.

A flaw that this writer has observed in comparable tomes of this magnitude is a tendency to pontificate on the nature of pain; to compromise the clinical intention with philosophical diatribe; to dilute the successful paradigms of understanding and treatment. Here, the practitioner focus is maintained throughout; the points are as clear as the writing itself; and even the Preface and Foreward are succinct and attention-grabbing.

Unlike many such ambitious projects, "Handbook of Pain Management" flows relatively smoothly, though not quite as if penned by a single source. It is more redundant than one would like to see in a book of this pedigree, and the duplication manifests in proximate chapters, underscoring the uneven editing.

I was similarly disappointed to discover that the 58 chapters were subdivided into the five nebulous categories of Foundations, "Therapeutic Modalities," "Pharmacologic Interventions," "Pain Management in Selective Disorders *[sic,* should this not be "Selected Disorders?"], and "Selected Topics." Where more definitive divisions might have led the reader to consider alternative classifications of pain and interventions to reduce it, the ones offered in fact force the reader to search the Index (which does happen to be excellent) for specific topics: in other words not to be able to easily read through from beginning to end or even from one chapter to its neighbor.

Moreover, the reader must often peruse several remote areas in order to be sufficiently apprised of the latest technology and think-

ing before applying methods in practice: in other words, having to internally unlearn and re-learn piles of facts as happened between the"classroom/memorization" and "hospital synthesis" years of training in medical school. I'm uncertain as to whether this reality stemmed from inability of the Editor and two Associate Editors to concur on more lucid format or whether no such wished-for overarching overview exists; it might have been illuminating for the editors to reveal some of their decision-making process in an introductory statement to the rest of the book.

A solid starting place for any handbook would be to establish the parameters for later review, and these editors sagely chose to indeed begin with rule-making and boundary-setting, in Michael Feuerstein's thoughtful Chapter 1, "Definitions of Pain." One basis of understanding of pain might draw upon distinctions between observable and measurable indicators and more subjective and less definable reports. Another avenue of elucidation might involve the recognition that personal experiences described as unpleasant could be construed as pain, even in the absence of damage-causing biological stimuli. Third, it is feasible to examine the relationship between functional and productive capacity in the context of somatic preoccupation and emotional state. Just as physicists may hold concepts of energy as both a wave and a particle, Dr. Feuerstein argues that healing practitioners must imagine pain as existing simultaneously on a number of continuums.

The next several chapters try to pinpoint the physical aspects of pain: probing human anatomy with medical electrodiagnostics, detailing differences between acute and chronic presentations, and providing a taxonomy perhaps relevant to the filing of Workers Compensation or Disability claims. Lumped in with that mass are a few entries broaching the subject of psychological evaluation - including structured questionnaires and rating scales - general behavioral predictors, and applications to children and the elderly. Hence ends the first subsection of "Foundations," with multiple suggestions of pathways to consider regarding the "What is" of pain but with little enlightened advice about which direction might be the most useful or promising.

Although the next broad subsection is "Therapeutic Modalities," placing the third section of "Pharmacologic Interventions" second might have allowed the development of ideas to progress more smoothly, since more practitioners may be familiar with NSAIDS, narcotic analgesics, muscle relaxants, antidepressants, and anticonvulsants than with the neurosurgical (nerve blocks, Stimulation implants), physiatric, chiropractic, hypnotic, and cognitive interventions outlined. And, while the detoxification protocols found in several sites unwaveringly attest to the risks of long-term use of controversial drugs such as Methadone, there is scant coverage of the differential risks of inadequately medicating pain in known addicts or of iatrogenically making an addict from an otherwise healthy individual with debilitating painful sensations

The tripartite cluster of chapters dealing with headache (Chapters 19, 20, 21) is of high merit in their perspective and, possibly, in the breadth of application given the statistical likelihood of any reader being confronted with this symptom during the course of a career, most specifically, the origins and resolutions of migraine. Oddly, the trigeminal pain of tic *douleureux,* emphasized widely during training as "the worst pain known to *Homo Sapiens,"* rates a few short paragraphs in Chapters 22 and 23.

Among the plethora of information, what may be the most common pain presentation worldwide, Chapter 27, "Differential Diagnosis of Low Back Pain," provides a navigable clinical approach to this oft-seen problem. The remainder of this extended section on "Pain Management in Selective Disorders" includes arthropathy, neuropathy, genital pain (male and female), postherpetic conditions, phantom pain, and pain of malignancy, in no particular order and with no special emphasis.

The "Handbook" ends with some economic concerns, grouped together under "Selected Topics." From primary care to inpatient settings, the key to successful intervention with complaints of pain seems to be empathy, precise history-taking, broad-based and multidisciplinary approach, liberal consultation with experts, occupational rehabilitation, amid mindfulness of legal aspects.

"Handbook of Pain Management" is an ambitious book which is well-written and poorly organized. Most topics of general interest are covered, and some specialized concerns addressed in detail. Discussion exists on a multitude of issues about how to proceed when a patient with pain comes for relief, but there is no summary suggestion as to how to take a Pain History, establish a Pain Clinic, or implement a Pain Team. The research data presented are up-to-date and comprehensively-presented by the respective authors but in a format too loosely-structured to either demonstrate the chronological development of ideas or the retrospective logical review of approaches tried and discarded or adopted. Finally, this writer was hoping to encounter a definitive integrated explanation for the existence of pain from editors as prestigious and experienced as these, and the lack of even a simple statement on the status of the thinking and approach of pain was dispiriting.

Editors note:

This book review was written by the Chair of the Department of Psychiatry, Commonwealth Health Center, Saipan and Medical Director, Division of Mental Health and Social Services in the Commonwealth of the Northern Mariana Islands.

Dr. Post is a full-time practicing psychiatrist specializing in addiction medicine, forensic evaluations, human sexuality, traumatic stress and holistic health. She was recently awarded First Prize in the Arizona Authors' Association National Literary Contest for her piece "Strike One" – about battering relationships. She may be contacted at P.O. Box 5424, Saipan, MP 96950–5424.

Many thanks, Dr. Post, for a very thorough book review.

Norman Goldstein MD, Editor



Medical School Hotline

The Role of the New Cell and Molecular Biology Graduate Program in Medical Education

Rebecca L. Cann PhD
Professor
Department of Genetics and Molecular Biology
John A. Burns School of Medicine
University of Hawaii

Many of us have heard the news that the complete DNA sequence of several human chromosomes is now known. Local physicians may be acquainted or have collaborated with individual scientists working on single genes or families of genes, such as those causing colon cancer, thalassemia, neurodegenerative diseases, and immune disorders. They may also know that the Howard Hughes Medical Institute supports physicians seeking training in molecular biology through MD/Ph.D. programs. But they may not be aware of the fundamental role in the Human Genome Project that was played by the Wellcome Trust, the world's largest independent medical research charity. Such support from the medical profession here and abroad is stimulating the new field of molecular medicine, and is one of the reasons why the John A. Burns School of Medicine (JABSOM) has recently instituted a new graduate program in Cell and Molecular Biology.

Medical scientists have been involved fundamentally in the process of sequencing the human genome from the beginning and continue to lead the efforts to understand complex diseases like cancer, hypertension, mental illness, and aging. In the case of the Wellcome Trust, scientists working at the Sanger Centre outside of Cambridge (UK) are part of a larger international collaboration that involves assembling a complete rough draft of the entire human genome by February 2000. This working draft will provide information about the very basis of life, health, and disease for biomedical researchers around the world, and is almost a year ahead of schedule. This example illustrates how the medical profession is adjusting to and utilizing new information to transform certain fields and discover better means of disease prevention, diagnosis and treatment.

Another example is Malaria which has reemerged as a major health problem around the world, yet the understanding of disease pathogens and efficient vectors that transmit them would be crippled without information about hypervirulent Plasmodium strains and Polymerase Chain Reaction (PCR)- based tests to diagnose specific infections. In order to face malaria in the new century, public health, epidemiology, molecular genetics, pharmacology, biochemistry, and physiology need to be taught as a common package in a multidisciplinary setting and reinforced by real-life applications. This has not been possible in a traditional graduate education program that focused on narrow sub-fields of biological science, and kept students in the classroom. From the identification of killer E. coli to the control of GI infections in a neonatal nursery, molecular biology has changed the art of infectious disease diagnosis.

The new Cell and Molecular Biology Program will help to teach basic scientists in a non-traditional format along with medical students, and we hope that it will stimulate education in both groups by bringing together students with a common goal: lifelong learning and discovery. Innovations like the Problem-Based Learning (PBL) format make it easier to discuss the ethical issues surrounding informed consent as well as the molecular basis for the particular disorder underlying a certain disease. A case in point: Oncogenes and tumor suppressers were considered unusual topics in medical education ten years ago until the mapping of specific mutations allowed medical practitioners to devise better patient care protocols. JABSOM's medical students are now taught that most cases of cystic fibrosis are caused by a single common mutation in the DNA sequence of a protein forming part of an ion channel. They learn that certain populations, owing to their unique history and place of origin, have elevated risks of diabetes, hypertension, blood disorders, and kidney disease. The students are also beginning to pay as much attention to a family pedigree as they are to a thorough physical exam, but it has been difficult to incorporate some of this new knowledge into an effective medical curriculum.

The goal of the Cell and Molecular Biology program is to produce a new generation of research scientists equipped with the tools to innovate, explore, and utilize biotechnology. Available are laboratories and research projects that are particularly strong in teaching students how to use model systems, such as the humble mouse or fruit fly, as a surrogate for a human. This simplifies a number of issues, ethical and practical in nature. It allows students to tinker with a gene, a protein, even a whole organ, and study what specific changes take place if a DNA or RNA sequence coding for an important candidate gene is removed, blocked, or altered. There are researchers on the faculty particularly interested in understanding how the structures of new drugs might be designed, based on knowledge of the place where a particular molecule must cross a cell membrane or bind to a particular cellular product. It is hoped that the new program will produce researchers equipped with these necessary skills.

Finally, many people are aware of the exciting new reports of genes that fundamentally alter life span, in some cases, doubling and tripling it. At least 4 different genes are known to affect the life-span of animals now, and many researchers speculate what consequences such information might have on human life, if found and manipulated in the human species. Such speculation is closer to scientific reality than the media hype surrounding human cloning. There is need for a new generation of scientists that can deal with the complex issues of gene manipulation for life enhancement and gene therapy, as well as assisted reproduction. In a traditional academic setting, such topics would be difficult to integrate. Knowledge that the genes controlling aging in animals are a consequence of their essential function in the growth and development of the embryo can only be put into an appropriate context by teachers and mentors who respect each others specific training.

A comprehensive course on human aging must have contributions from molecular developmental biologists, psychiatrists, physiologists, nutritionists, population geneticists, and epidemiologists, and would greatly benefit by the input of an economist as well. JABSOM's faculty will now offer a new Cell and Molecular Biology program

Continued on p.109

The Bishop Street Equity Fund

An Impressive Performer Managed by a Name You *Know* and *Trust*: **First Hawaiian Bank**

The Bishop Street Equity Fund

- Seeks long-term capital growth
- A consistent performer
- Tax efficiency from low portfolio turnover

	ONE YEAR (ended 12/31/99)	SINCE FUND INCEPTION (1/30/97)
NEW Bishop Street Equity Fund *Retail Class A Shares**	**24.78%**	**24.44%** (6/14/99)
Bishop Street Equity Fund *Institutional Class Shares*	**28.63%**	**27.05%** (1/30/97)
S&P 500	**21.04%**	**25.83%**

Serving You for a Century and a Half

The Fund is managed by First Hawaiian Bank, one of the nation's oldest financial institutions. First Hawaiian has been serving the financial and investment needs of the local community since 1858.

Stop by Your Local First Hawaiian Bank Branch Today! To learn more about the Bishop Street Equity Fund or any of our mutual funds, please visit a First Investment Center Investment Specialist at your nearest First Hawaiian Bank branch. Securities are offered through BWC Investment Services. Or call us at **643-FUND (3863)** to obtain a free prospectus, which contains complete information about charges and expenses. Please read the prospectus carefully before you invest.

BISHOP STREET FUNDS

Advised by
First Hawaiian Bank

THE BISHOP STREET FUNDS
Equity Fund
Hawaii Municipal Bond Fund
High Grade Income Fund
643-FUND (3863)

The Bishop Street Funds are distributed by SEI Investments Distribution Co. BWC Investment Services is a registered broker dealer, member NASD/SIPC. Investment Representatives are registered representatives of BWC Investment Services. *The Class A shares opened on 6/14/99. The performance shown for the Class A shares prior to such date is based on the performance of the institutional class shares adjusted to reflect the maximum sales charge of 5.75% for the Class A shares. The cumulative return from 6/14/99 to 12/31/99 is (13.59%) with load (Class A) and 20.52% without load (institutional class).

The performance data quoted represent past performance and do not guarantee future results. The investment return and principal value of an investment will fluctuate, so an investor's shares, when redeemed, may be worth more or less than their original cost.

The S&P 500 Index is an unmanaged composite of 500 stocks. You cannot invest directly in the index.

MUTUAL FUNDS ARE NOT FDIC INSURED, HAVE NO BANK GUARANTEE, AND MAY LOSE VALUE.

© 2000 Bishop Street Funds

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA

The patient's need to control his pain

A.A. Smyser

Who is the best judge of a patient's pain? It now is standard dogma among pain relief specialists that this person is the patient himself or herself.

The patient should describe when, how and where it hurts – then expect relief in just about all cases. If it doesn't come, the trouble most likely is with the provider, not the patient. A change of provider may be in order.

This applies to all cases, not just terminal cases, says a policy directive of the American Cancer Society, pushed through by Dr. Reginald Ho of Honolulu when he was national president.

Last year Governor Cayetano's Blue Ribbon Panel on Living and Dying with Dignity reported that pain control continues to be lousy for many Hawaii sufferers, partly due to their failure to demand it, partly due to their doctors' failure to provide it.

Some physicians are inhibited by fear of overdosing, which any competent doctor can learn to avoid. Others are just plain ignorant about what can be done.

Some fear addiction in terminal patients – as if that mattered.

Skies are brightening for patients.

The most influential national organization shaping health care policy is the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). All major Hawaii hospitals bear its seal of approval.

This year it adopted broadened standards that say pain control is the right of all patients, not just terminal patients.

It describes measures to tell if a health-care organization is complying. Noncompliance will affect future accreditations.

Ken Zeri of Hospice Hawaii formerly was associated with JCAHO. He expects its new rules – to which he contributed – to be very positive in their impact.

So does Pat Kalua, chairman of the Hawaii Cancer Pain Initiative and patient/family care coordinator for the St. Francis system.

Patients and their supporters should speak up if they feel pain control is inadequate, even change physicians or providers.

The new JCAHO rules say patients should be taught that pain management is an essential part of their treatment.

Catholic doctrine long has held pain management that hastens death is acceptable so long as there is no underlying intent to cause death.

Early articles in this series have focused primarily on policy improvements in care for the terminally ill. One is a new model law that facilitates surrogates in acting for the best interest of patients unable to speak for themselves.

Another is a pending new law that should help expand hospice care.

Pain control is for everyone, whether terminally ill or not. In all areas we will be more assured of getting the better care enshrined in new laws and regulations if we are aware of our options and demand the best from our health-care providers.

Don't be shy.

A.A. Smyser is the contributing editor and former editor of the Star-Bulletin.

Editor's Note:

This column, "The Patients Need to Control Pain" is the last in a series by A. A. "Bud" Smyser appearing June 10, 1999 in the Honolulu Star-Bulletin and reprinted here with permission. The other articles are "Health Care in Final Days" (June 1, 1999), "Improving the Law on Living Wills" (June 3, 1999) and "Legislature Acted to Help Hospice Care' (June 8, 1999). For all of his medical writings over the years, I propose that Bud Smyser be presented with an Honorary M.D. L. (Medical Doctor of Letters) degree by the University of Hawaii and lauded by the Hawaii Medical Association for 53 years of service to the community.

Norman Goldstein MD, Editor



A Plan to Improve Pain Management for Dying Patients

A proposal by the Governor's Blue Ribbon Panel on Living and Dying With Dignity
Task Force On Pain Management in the Dying Patient, 1997

Members: Norman Goldstein MD and Max Botticelli MD, Co-Chairmen; Gary Okamoto MD, Committee Director; Jeffrey Wang MD; Reginald Ho MD; Jon Streltzer MD; Don PurcellMD; John Stiller MD; Lynn Dahl MD; Pat Kalua RN, BSN; Barbara Shirland RN; Shawn Gafford PharmD; Amy Krueger RN; Hob Osterlund RN; Linda Landau RN; Keith Kamita, Chief, NEA; and Gary Rinzler MD, MPH (Recording Secretary)

Introduction

Dying is often accompanied by pain which is severe enough to make living unbearable. An interdisciplinary approach to the palliation of pain can, in most instances, bring sufficient relief and assure comfort and dignity during one's final days. This degree of pain relief should be available to all. To assure that it is, the following recommendations are made:

• That the Agency for Healthcare Policy and Research and American Pain Society guidelines for the treatment of pain be accepted as the standard of care for all healthcare providers.[1,2]

• That the right to skilled pain management in the dying patient be included in the "Patient's Bill of Rights" at all DOH certified and/or licensed facilities.

• That the Department of Health be empowered and directed by legislation or executive action to use these standards in developing measurable, enforceable objectives by which the adequacy of pain management in those institutions and by those providers can be measured.

• That these measurements be carried out routinely as part of the DOH periodic reviews and that citations be issued to those failing to comply.

• It is the intention of the committee that the term "Cancer Pain" be broadened to include all patients dying with pain.

Minimum Standards

1. Evidence that specially designated caregivers are available to dying patients with pain who have been trained in pain control and who have the authority to administer this care.

2. That an assessment of pain be made part of the initial assessment of all patients dying with pain.

*3. To assure optimal pain management, formal means should be developed and used within each institution for evaluating pain management practices and for obtaining patient feedback to gauge the adequacy of its control. The quality of pain management should be evaluated in all settings where patients (with cancer) receive care.

*4. The quality of (cancer) pain management should be evaluated at the points of transition on the provision of services (e.g., from the hospital to the home) to determine that optimal pain management is achieved and maintained.

*5. For pain management to be effective, each practice setting should designate who will be responsible for pain management.

*6. Policy and standard procedures, which define the acceptable level of patient monitoring and appropriate roles and limits of practice for health care providers, should govern the use of specialized analgesic technologies.

*7. To ensure optimal pain management, formal means should be developed and used within each institution for evaluating (cancer) pain management practices and should include feedback regarding the adequacy of pain relief. Optimal pain management requires the interaction of all members of the health care team, including the patient. A formal process should be developed to evaluate the quality of management across all stages of the disease and across all practice settings.

(*Standards No.3 through No.7 are verbatim from the "Management of Cancer Pain"[1] page 143).

Institutions to be Monitored

1. Acute care hospitals
2. Skilled nursing/intermediate care facilities
3. Community based settings (eg. Residential care homes)
4. Hospice programs
5. Home health/home-care agencies

Other Recommendations

1. Problems exist in the referral practices Hospice Care and must be addressed. This includes the restrictive prognostication guidelines of "Six months of life or less" and therefore we recommend that the State of Hawaii mandate benefits for Hospice Care with a **one year or less** life expectancy.

Continued on p.93

Pain Management and Palliative Care in Hospice

Barbara Shirland RN, CRNH,
Director of Clinical Operations, Hospice Hawaii, Chair, Hawaii Cancer Pain Initiative

"There is nothing more we can do." Every physician, nurse, and social worker hates to have to be the one to deliver the bad news when a disease has reached the terminal phase and when further curative measures are futile. No one wants to deprive the patient and family of hope. This is understandable. However, most patients know quite well what is going on. The experience of not being told frequently results in the patient's feeling isolated. What patients often want is the simple truth and reassurance that their physician whom they have grown to trust, will not abandon them at the end.[1]

Fortunately, the statement "There is nothing more we can do," is not a true statement. In fact, there is a lot we can do during this final phase of life to alleviate pain and suffering in all of its forms. The first step in helping the patient and family accept this potential palliation of suffering is for the professional community to fully understand all that can be done during the final months of someone's life. We can indeed relieve pain and other uncomfortable physical symptoms. We can facilitate the completion of the "end of life tasks." We can support the family in processing the loss they are about to endure, and we can help people in this stage of life reach their potential of a peaceful and natural completion of their life.

Everyone who has had serious pain fears pain. Our first responsibility to the terminally ill patient is excellent pain management. Traditionally, physicians' attitudinal barriers to pain management have included fears of addiction and serious toxicity including respiratory depression, fears of the consequences of poor outcomes such lawsuits and fears of scrutiny by regulatory bodies.[2] Fortunately, in our community these factors are less of a problem among physicians than they are in many other places. Patients and families often seem to worry about addiction, however. In hospice care we will frequently differentiate between necessary medical use of opiates and addiction with such phrases as "An addict uses drugs to escape from life, you are taking the medication so you can better participate in your life." Reassurance and differentiation between physical tolerance and addiction are often needed to encourage patients to take the pain medication as prescribed.

Many patients still fear abandonment during the terminal phase, and this often gets translated into a lack of confidence that their pain will be well managed until their death. Quality of life issues also surface and pain management is essential to quality of life. Increased incorporation of palliative care principles into medical practice is timely in light of the current public eye on quality of life during the endstage. To further this end, new training programs would be useful to help health care professionals improve these critical skills.[3,4] The public also needs to be educated to understand that comfort during the final stages of life is a reasonable expectation.

Constipation, a result of immobility, reduced P0 intake of food and fluids, and narcotic analgesia may be successfully treated with a wide variety of dietary measures, medications and treatments. There is also a place in symptom management care for complementary therapies such as application of superficial heat and cold, massage, acupuncture, healing touch, relaxation techniques, guided imagery, and distraction.[5]

The alleviation of suffering, paramount to excellent hospice care, means much more than effective symptom management. Indeed, in any setting, caring for those with suffering due to advanced disease, whether physical, psychosocial or spiritual, is best addressed by an interdisciplinary team of specially trained professionals.[9] Many hospitals today are also establishing palliative care units or creating palliative care teams that address suffering in all of its forms, even prior to the terminal phase of a disease. The interdisciplinary team is basic to hospice care. Teams consist of the patient's own personal physician, and various hospice professionals including a Registered Nurse Case Manager, a Medical Social Worker, a Home Health Aide, a Chaplain, and specially trained volunteers. Together the team addresses, in addition to physical symptomology, the psychosocial and spiritual dimensions of suffering.

To address suffering in all its dimensions, Hospice Hawaii has begun a specialized program called *Na Hoa Malama* (Friends Who Care). This program is based on the work of Dr. Ira Byock, an emergency room physician and medical director of a hospice in Missoula, Montana. Dr. Byock identifies "developmental milestones and tasks at the end of life" that relate directly to the usual causes of non-physical suffering. Failure to complete these end of life tasks, in one way or another, is generally at the root of the non-physical suffering in the terminal phase. Dr. Byock says the tasks include reaching a sense of completion with worldly affairs, a sense of completion in relationships with community, a sense of meaning about one's individual life, an experience of the love of self and of others, a sense of completion in relationships with family and friends, acceptance of the finality of life, a sense of a new self beyond personal loss, finding a sense of meaning about life in general, and a surrender to the transcendent, the unknown — "letting go."[10]

Every patient is an individual and each has his or her own goals, agenda and abilities. Working with the patient's own goals is essential in helping to facilitate the completion of this stage of life. The values of the patient and family determine how they perceive what is happening to them and helps to frame what they define as "suffering." It quickly becomes obvious that the full interdisciplinary team is needed to guide a patient and family through and beyond their suffering. It can be done. Peaceful death is a realistic possibility.

We are born surrounded by our families and friends and sur-

rounded by love. With the support of a hospice team, patients can die the same way. If the sages are to be believed, love is the only thing that goes with us into death.

Hospice care is generally delivered in the patient's own home. Many families worry that patients must be in the hospital for pain management to be effective. Although pain management is quite effective in the home setting, the less "technical" methods of administration of pain medication tend to work better in the home with family members as caregivers. A restriction hospices have been facing since the inception of the Hospice Medicare Benefit is cost containment. This restriction is also rapidly coming to the forefront in the hospital setting. In hospice, the pain must be effectively managed at the lowest possible cost, since reimbursement to hospices is given on a per-diem basis, with no consideration given to the particular treatments offered. In the home setting, the challenge is to keep the interventions "human scale." That means that in general highly technological interventions create much anxiety among lay caregivers. This concept is supported by the World Health Organization and the U.S. Public health Service.[5] By keeping the methods of medication administration away from the highly technical in the hospice setting, both the goals of reducing family anxiety and cost containment are met.

Transdermal fentanyl is an efficacious medication in the terminal setting. Its advantages include infrequent dosing, fewer side effects compared to PO opiates, ability to continue dosing when the oral route is not available (such as when death is imminent) and good control of pain. Hospices consider the relative high cost of this medication to be outweighed by its advantages. On the other hand, PCA pumps or other parenteral modalities can be intimidating to families in the home setting and are even more costly. On occasion PCA pumps are necessary, but use on a large scale would make it impossible for most hospices to operate within the financial constraints with which they must function.[6] The proper use of adjuvant medications such as NSAIDS and/or steroids for bone cancer pain, and anticonvulsants or antidepressants for neuropathic pain along with the opiates can also be critical factors in the comfort and therefore quality of life during the endstage.

An often overlooked route of administration not only for opiates but other medications is the rectal route. Though PO administration remains the preferred route, the rectal route is a simple technique of administration with a comparable reliability of absorption and low cost as the oral route.[7] The rectal route is also available when the patient can no longer swallow as death approaches. Most family members can be easily taught rectal administration.

Respiratory problems frequently require palliation in the hospice setting. Lung cancer is the most common terminal cancer diagnosis. Many lethal cancers tend to metastasize to the lungs. Radiation or chemotherapy may result in compromised pulmonary function. Ascites from abdominal cancers may contribute to dyspnea. Comfort is often restored with low dose morphine, anxiolytics, oxygen administration, steroids, possibly PO antibiotics in the case of pneumonia, and/or paracentesis for ascites.[8]

Other uncomfortable symptoms often addressed in the hospice setting include nausea and constipation. Fortunately medical management of nausea is a realistic goal today with the variety of effective medications available. Even difficult to control nausea often responds to "BDR" suppositories, consisting of Benadryl 25mg, Decadron 4mg, and Reglan 2Omg.

References

1. Randal, J. Preparing for Life's End: Do More Health Professionals Need More Training? *Journal of the National Cancer Institute* 89(1)15-16.
2. Weissman, D., MD. Cancer Pain Education for Physicians in Practice: Establishing a New Paradigm, *Journal of Pain and Symptom Management* 12(6) 364-371.
3. Tuch, H., MD, Palliative Care: Finding Meaning at the End of Life. Geriatrics 51(12)12.
4. Griffie, J., RN, and Weissman, D., MD. Palliative Medicine Nurse Preceptorship at the Medical College of Wisconsin, *Journal of Pain and Symptom Management* 12(6) 360-363.
5. U.S. Department of Health and Human Services, Public Health Service, Agency for Health Care Policy and Research, Clinical Practice Guideline Number 9, *Management of Cancer Pain. March,* 1994.
6. Baumrucker, S., MD. Duragesic (transdermal fentanyl) in Hospice Care. *The American Journal of Hospice & Palliative Care.* Nov.-Dec., 1996.13-15.
7. Warren E., PharmD), Practical Use of Rectal Medications in Palliative Care, *Journal of Pain and Symptom Management.* 11(6) 378-387.
8. Kemp, C., RN, Palliative Care for Respiratory Problems in Terminal Illness. *The American Journal of Hospice & Palliative Care.* Jan. -Feb., 1997.26-29.
9. Doyle, D., MD, Palliative Care: Much More Than Terminal Care. *British Journal of Hospital Medicine.* 56(6)252.
10. Byock, I., MD, Developmental Milestones and Tasks at the End of Life, presentation at the NHO Annual Symposium, Washington, DC, October 20, 1994.

Continued from p.91

2. Benefits for Medicare and Medicaid accepted pain management services (including but not limited to, surgical and/or radiation intervention) needs to be provided independently from the daily hospice coverage allowance.

3. Educational coursework in pain management should be encouraged and supported in the Continuing Education curricula at all DOH reviewed facilities for all licensed healthcare personnel.

4. Although it is recommended that pain management services be readily available and easily accessed, it is not the intent of this panel to legislate mandatory referral of patients to a "Pain Specialist." Through appropriate education and awareness of services already available, the patient's primary physician should be able to treat pain adequately. If the primary physician is unable to control the patient's symptoms, referral to the appropriate services (eg. pain management specialist, hospice, pain team, etc.) should be made.

5. We recommend that existing professional organizations be directed to develop standards for pain management and that they incorporate methods to assure quality in this area (eg. Peer review. Continuous Quality Improvement. Quality Assurance, etc.)

References

1. "Management of Cancer Pain", Clinical Practice Guideline Number 9. U.S. Department of Health and Human Services, Public Health Service, from the Agency for Health Care Policy and Research Publication No.94-0592, March, 1994, 257 pages.
2. "Quality Improvement Guidelines for the Treatment of Acute Pain and Cancer *Pain".* American Pain Society Quality of Care Committee Consensus Statement. Journal of the American Medical Association. December 20. 1995. Vol 274. No.23, 7 pages.



Healing Touch

Hob Osterlund RN, MS, CHTP

Introduction

Healing Touch (HT) is a collective of techniques involving the use of hands to increase the recipient's sense of well-being. Practitioners trained in HT techniques use their hands to consciously direct an energy exchange with the patient, often for the purpose of pain and anxiety reduction. This treatment modality as well as its precursor, Therapeutic Touch (TT), have experienced increasing popularity with patients over the last decade. HT and TT are noninvasive procedures for which there is no medical counterpart and are compassionate options to offer to appropriate patients. Modalities that are congruent with the current trend in holistic health care, they are useful forms of communication between patient and health care practitioner while requiring only minimal financial and resource utilization.

Theory/Assumptions

Pharmaceutical and invasive pain techniques are based on a Newtonian model of medicine. This model sees the body as an intricate mechanism which is controlled by the brain and the peripheral nervous system, functioning like a complex machine. Interventions are geared toward the removal or repression of pain by chemical or surgical alteration of the workings of that machine.

Energy-based techniques such as Healing Touch and Therapeutic Touch are based on the paradigm of Albert Einstein, which sees human beings as networks of complex energy fields. These energy fields are constantly interacting with the physical body. They are both more subtle as well as more easily influenced than the human body. HT and TT are specialized forms of treatment geared toward affecting the energy system that may be imbalanced due to disease states. Practitioners work to restore balance by assisting the energy system of another individual to normalize, thus helping to regulate cellular physiology and to provide relaxation as well as pain relief.

Both HT and TT are practices based in modern nursing practice and research, and are meant to be integrated with allopathic medical care rather than used in isolation from it.

Correspondence to:
Hob Osterlund RN, MS, CHTP,
Clinical Coordinator, Pain Management Services
The Queen's Medical Center
1301 Punchbowl St.
Honolulu, Hawaii 96813
808-547-4726 hosterlund@queens.org

Healing Touch

There is a growing body of literature currently available on Healing Touch. According to Healing Touch International in Colorado*, there are approximately 60 studies approved, in process or completed nationally, including a multi-site Air Force study on lingering post-op pain; the impact of HT on pain and joint motility after total knee replacements; the impact of HT on depression; HT and oxygenation/cardiovascular variables in critically ill patients; HT's effect on recovery levels in PACU after abdominal hysterectomy; the impact of HT on post-Cesarean-section wound infection; the effect of HT on salivary immunoglobuninA; and two studies at The Queen's Medical Center in Honolulu on post-operative mastectomy pain and on pain in employees with back injuries. In an unpublished satisfaction survey of 198 inpatients at The Queen's Medical Center, patients rated their average reduction in pain 2.8 on a 0-10 scale after a 20-minute treatment. The average increase in relaxation was 1.8 on a 1-4 scale. Of these patients, 94.9% rated themselves very satisfied (83.3%) or satisfied (11.6%) with their last HT treatment. Queen's reports that more than 3000 treatments were done in 1998 with routine reports of pain reduction.

Therapeutic Touch, which is one of the specific techniques used in HT, has been studied relative to hemoglobin levels (Krieger, 1972), enzymatic activity (Smith, 1972), wound healing (Wirth, 1972), pain and anxiety (Kenosian, 1995), (Samarel, 1998). In addition, an article on the effect of distant healing (Sicher, 1998) on patients with AIDS reported significantly fewer doctor visits, lower illness severity and fewer days of hospitalization in the double-blinded treatment group. The following is a review of the literature on the use of TT to reduce anxiety and pain.

Anxiety

Heidt's 1981 study of anxiety levels in 90 hospitalized adult cardiovascular patients compared patients receiving TT, casual touch and no touch (Heidt, 1981). The group receiving TT experienced a significant reduction in post-state anxiety compared with those who had received intervention by causal touch or no touch. Quinn (1982) partially replicated Heidt's study by examining the effects of TT performed by nurses trained in TT and a simulation of TT performed by nurses who had no knowledge of TT. Among the 60 hospitalized cardiovascular patients in this study the group that received TT again showed a significant decrease in anxiety (Quinn, 1982).

Parkes studied the effect of TT in 60 hospitalized elderly patients. One group received non-contact TT, one another form of mimic TT and one no touch (Parkes, 1985). There was no difference in the pre- and post-state anxiety scores in any group. Olson, et al. studied the effects of TT on stress among 23 individuals who experienced posttraumatic stress following Hurricane Hugo (Olson, 1992). Using physiologic measures and two visual analogue scales to rate psychological stress the researchers found that subjects receiving

TT showed a decrease in mean anxiety scores after TT.

Gagne and Toye studied 31 inpatients in a Veteran's Administration psychiatric facility (Gagne, 1994). One group received TT, one received relaxation therapy and one group a mimic TT. While both the relaxation therapy and TT group reported a significant reduction of anxiety by self-report and by an observer's rating of pre- and post-motor activity, the reduction in self-reported anxiety was greater in the TT group.

Samarel and colleagues (1998) studied 31 women scheduled for mastectomies. One group received TT touch and dialogue; the other dialogue and quiet time. The TT experimental group showed a lower preoperative pattern manifestation of state anxiety than dialogue and quiet time.

Pain

Meehan studied pain in 108 post-operative adults who received either TT, mimic TT or standard treatment of IM narcotic injection (Meehan, 1993). Pain was measured using a visual analogue scale and a Pain Intensity Descriptor form. There was no significant difference in the posttest pain scores for the TT and the mimic TT group. Scores of the group who received narcotic were significantly lower: the mean posttest score of the narcotic group was 36.63, the TT group mean was 52.74, and the mimic TT group mean was 61.72.

Keller and Bzdek studied the effect of TT on tension headaches among 60 adults known to suffer from tension headaches (Keller, 1986). One group received TT and one a placebo TT. Five minutes after the intervention 70% of the TT group had a significant reduction in pain score while only 37% of the placebo group demonstrated a reduction. Four hours later a significant difference continued. Fifty percent of the placebo group required further intervention to relieve pain; only 17% of the TT group required further intervention.

As noted, the studies reported are investigations of Therapeutic Touch. Therapeutic Touch is a specific technique developed by Dolores Kreiger, RN, PhD and Dora Kunz over 20 years ago. Many people are building upon Kreiger's foundational work, including Janet Quinn of the University of Colorado Health Sciences Center, who conducted the first federally funded project on TT and Daniel Wirth of Healing Sciences Research International. Their programs have demonstrated growth, evolution in thinking and recent publication in scholarly journals (Wilson, 1995).

**For a detailed Healing Touch research summary, contact Healing Touch International at 12477 West Cedar, Lakewood, CO. 80228. Send $3.00 for current summary. 303-989-0581 phone, 303-985-9702 fax, e-mail ccheal@aol.com. Web page http://www.healingtouch.net.*



References

Gagne, G. T., R.C. (1994). The effects of therapeutic touch and relaxation therapy in reducing anxiety. *Archives of Psychiatric Nursing, 8*(3), 184-9.

Gerber, R.(1988). *Vibrational Medicine: New choices for healing ourselves.* Santa Fe: Bear and Company.

Heidt, P. (1981). Effect of therapeutic touch on anxiety of hospitalized patients. *Nursing Research, 30*(1), 32-37.

Hover-Kramer, D., Mentgen, J., Scandrett-Hibdon, S. (1996). *Healing Touch: A resource for health care professionals.* Boston: Delmar Publishers.

Jacox, A., Carr, D.B. & Payne R. (Ed.). (1994). *Management of Cancer Pain.* (Vol. 9). Baltimore: U.S. Department of Health and Human Services.

Keller, P. B., V.M. (1986). Effects of therapeutic touch on tension headache pain. *Nursing Research, 35*(2), 101-106.

Kenosian, C. V. (1995). Wound healing with noncontact therapeutic touch used as an adjunct therapy. *Journal of Wound, Ostomy and Continence Nursing, 22*, 95-99.

Krieger, D. (1972). The response of in-vivo human hemoglobin to an active healing therapy by direct laying on of hands. *Human Dimensions, 1*, 12-15.

Meehan, T. C. (1993). Therapeutic touch and postoperative pain: A Rogerian research study. *Nursing Science Quarterly, 6*(2), 69-78.

Meehan, T.C. (1998). Therapeutic touch as a nursing intervention. *Journal of Advanced Nursing*, 28 (1), 117-125.

Olson, M., Sneed, N. (1995). Anxiety and therapeutic touch. *Issues Mental Health Nurs.* 16, 97-108.

Olson, M., Sneed, N., Bonadonna, R., Ratliff, J. & Dias, J. (1992). Therapeutic touch and hurricane Hugo stress. *Journal of Holistic Nursing Association, 10*(2), 120-136.

Olson, M., Sneed, N., LaVIa, M., Virella,G., Bonadonna, R., Michael, Y. (1997). Stress-induced immunosuppression and therapeutic touch. *Alternative Therapies*, 3(2), 68-73.

Parkes, B. (1985). *Therapeutic touch as an intervention to reduce anxiety in elderly hospitalized patients.* (Dissertation ed.). Austin: University of Texan at Austin.

Quinn, J. F. (1982). *An investigation of the effect of therapeutic touch done without physical contact on state of anxiety of hospitalized cardiovascular patients.* (Dissertation ed.). New York: New York University.

Samarel, N.,Fawcett, J.,Davis, M.,Ryan, F. (1998). Effects of dialogue and therapeutic touch on preoperative and postoperative experiences of breast cancer surgery: An exploratory study. Oncology Nursing Forum, 25(8), 1369-1376.

Sicher, F., Targ, E., Moore, D., Smith, H. (1998). A randomized double-blind study of the effect of distant healing in a population with advanced AIDS. *Western Journal of Medicine*, 169(6), 356-363.

Slater, V.E. (1996) *Healing Touch.* In *Fundamentals of Complementary and Alternative Medicine.* New York: Churchill Livingstone.

Smith, M. J. (1972). Paranormal effect on enzyme activity. *Human Dimensions, 1*, 15-19.

Wewers, M. E. L., Nancy K. (1990). A critical review of visual analogue scales in the measurement of clinical phenomena. *Research in Nursing & Health, 13*, 227-236.

Wilson, D. (1995). Therapeutic touch: Foundations and current knowledge. *Alternative Health Practitioner, 1*(4), 55-66.

Wirth, D. (1972,). The effect of non-contact therapeutic touch on the healing rate of full thickness dermal wounds. *Cooperative Connection*, 4-8.

Invasive Techniques Utilized in Chronic Pain Management

Jeffrey S. Wang MD

Abstract

A multidisciplinary approach to the treatment of chronic pain has been one of the most effective means of restoring the ability of a patient to return to an increased level of function. Many techniques used for diagnostic and therapeutic means have been utilized as part of this approach. This paper will describe some of the more common invasive techniques used in the treatment of chronic pain.

Invasive Techniques Utilized in Chronic Pain Management

Pain management has received much attention in the media lately with discussions ranging from physician assisted suicide to narcotic use in the chronic pain patient. Treatment of the chronic pain patient is best accomplished with a multidisciplinary approach as pain is a complex multidisciplinary problem. Proper treatment will often require input and therapy from anesthesiology, medicine, neurology, oncology, physiatry, physical and occupational therapy, psychiatry, psychology, surgery, and nursing services. Some of the more common treatments which have been performed by the anesthesiologist will be discussed. These therapies include nerve blocks, epidural injections, dorsal column stimulators, and subcutaneous infusion pumps. Many of these techniques are used daily for surgical anesthesia or post operative pain management. They are also useful in treatment of various chronic pain syndromes. Invasive therapies are only one aspect of pain treatments, and other treatment modalities will not be described in this article.

The epidural space is a potential space between the dura and the ligamentum flavum and lamina. It is present from the foramen magnum to the sacrococcygeal membrane. Injection into the epidural space may occur between any of the vertebra down to the caudal space. Various medications have been injected into the epidural space for anesthesia and/or analgesia. These medications include local anesthetics, narcotics, steroids, Clonidine, neurolytic agents, autologous blood, and hypertonic saline to name a few. Injections can be performed as a one time injection, or an epidural catheter may be placed for continuous infusions. The indications for an epidural injection in the acute setting include: surgery, obstetrics, postoperative pain, fractured ribs, pancreatitis, frostbite, herpes zoster, ischemic pain, and post dural puncture headaches. Indications for chronic pain include: low back and cervical pain, postherpedic neuralgia, chronic regional pain syndrome, malignancy, phantom limb, and diagnostic or prognostic blockade.[1] Epidural injections are usually placed at the closest dermatome to the level which is involved with their symptoms. There are various types epidural needles which can be used. The needle is placed on the midline or a paramedian approach to the epidural space. Confirmation of the epidural space may be made by loss of resistance technique or a hanging drop technique prior to the injection of the agents. Complications associated with this technique, although rare, may be attributed to either the needle placement or the specific agent injected. Insertion of the needle may injure the epidural veins which may result in an epidural hematoma, and bacterial contamination may cause an epidural abscess or meningitis. If these are not recognized quickly and treated effectively, nerve damage or paralysis may occur. Injection of local anesthetics may cause hypotension secondary to sympathetic blockade. Since large volumes are often used, an unintentional subarachnoid injection may result in a total spinal anesthetic which would require circulatory and ventilatory support. Narcotics may cause respiratory depression immediately after injection or delayed respiratory depression up to 12 hours later. Any medication injected into the epidural space should be preservative free since most preservatives are considered neurotoxic.

Epidural injections were first reported in 1901 as treatment for lumbar nerve root compression.[2] There have been numerous reports since then trying to delineate indications and efficacy of epidural steroid injections(ESI). The difficulty and controversy that arises is due in part to the inability of most researchers to control the variables. This would include the cause of the symptoms, duration of symptoms, history of surgical procedure, previous treatments, and the treatments being evaluated. Even in comparing studies which are considered to be well designed, the results are inconsistent.[3] ESIs have been utilized in the treatment of annular tears, chronic lumbar degenerative disc disease, herniated nucleus pulposa (HNP) without neurologic deficits, HNP with nerve root irritation, HNP with nerve root compression, spondylolysis, spondylolisthesis, facet arthropathy, scoliosis, ankylosis spondylitis, spinal stenosis, functional low back pain, and back pain following spine surgery.[4,5] There have been varying success rates which are mostly dependent on the cause of the symptoms. Acute radiculopathies seem to respond to ESIs better than chronic conditions. Success rates range from 83% to 100% if the symptoms have been present for less than three months. This decreases to 67% to 81% at six months, and 46% if symptoms have been present greater than a year. This was reported in uncontrolled studies.[6,7,8,9,10] Dilke reports through a prospective, randomized, double blind study the efficacy of ESI in the treatment of patients with disc problems. They had follow up to six days after the ESI and used a volume of 10ml.[11] Another prospective, randomized, double blind study showed no statistical significance between the ESI and placebo, however, the objective and subjective feelings of improvement were higher in the ESI group.[12] The difference between these two studies was that 2 ml of the steroid solution was placed, and follow up evaluation occurred after two to three days compared to the larger volume and longer follow up period of Dilke. Complications from ESIs have consis-

tently been shown to be rare. Unintentional dural puncture occurs 1% of the time. Cushing' syndrome[13] and congestive heart failure[14] have been reported, but these are extremely rare.

Specific nerve root blocks with steroids may be placed with fluoroscopic guidance. This may be therapeutic as well as diagnostic.[15] If the patient has relief of his symptoms with a single nerve root injection, this would comfirm the level that may require surgical correction. Peripheral nerve blocks with local anesthetic may be used for diagnostic purposes prior to surgical, chemical or thermal neuroablation.[16] Neurolysis has been traditionally recommended for use in patients with life expectancies of less than one year. Chemical neurolysis may be accomplished with the injection of phenol 6% - 8% in glycerol or alcohol 33% - 100%. The effects of these solutions may include precipitation of lipoproteins and mucoproteins, disruption of myelin, extraction of cholesterol, and phospholipids, and coagulation of proteins. Duration of these injections range from three to six months before regeneration of the nerve tissue. Complications from these injections are usually due to injury to surroundings structures. Alcohol may be painful during the injection and cause an alcohol neuritis with high concentration injections. Phenol may cause convulsions and renal toxicity. Doses are to be kept below 100 mg. Thermal neuroablation includes cryoanalgesia and radiofrequency ablation. Both of these methods require the insertion of a probe to apply heat or cold to the neuron. The equipment required can be costly and requires knowledge of its use. Radiofrequency techniques will heat the nerve tissue to 60° C - 100° C for coagulation. Cryoanalgesia will cool the nerve tissue to -60° C for destruction of the myelin sheath. These techniques have minimal tissue damaged, lack of neuritis or neuroma formation, and cryoanalgesia is reversible after three to six months. Difficulties with these procedures include sensory and motor deficits that are bothersome to the patient and recurrence of their symptoms.

The sympathetic nervous system is frequently blocked with local anesthetics in the treatment of various pain syndromes. In addition to the sympathetic chain which is innervated with fibers from T1 to L3, there are several distinct ganglia which are of use in the treatment of pain. These include the stellate ganglion (SG), celiac plexus (CP), and the hypogastric plexus (HGP). Sympathetic blocks have been used in the treatment of circulatory insufficiency which includes Raynaud's syndrome, arterial embolism, and vasospasm, chronic regional pain syndrome, herpes zoster, pain due to abdominal malignancies, and phantom limb pain.[17]

The SG formed from fibers the first thoracic nerve and occasionally the second thoracic nerve. It provides sympathetic innervation to the head and upper extremity. The ganglion lies in front of the transverse process of the seventh cervical vertebra. The block is usually performed at the transverse process of the sixth cervical vertebra to minimize the risk of puncture to the vertebral artery and the dome of the pleura. Injection of 10 ml to 20 ml of local anesthetic is adequate for blockade of the SG. Horner's syndrome, ptosis, myosis, and enophthalmos, will indicate sympathetic blockade to the head, but not necessarily the upper extremity. Complications of this block may include temporary hoarseness, brachial plexus block, pneumothorax, verebral artery injection, seizures, hematoma, subarachnoid block, and injury to any of the surrounding anatomical structures.

The celiac plexus is made up of one to five discreet ganglia which derives its innervation from T5 to T12. It provides sympathetic innervation to the abdominal viscera, stomach, small bowel, large bowel to the splenic flexure, omentum, liver, gallbladder, pancreas, spleen, adrenal glands, and kidneys. The CP is located anterior to the aorta at the level of the celiac artery which corresponds to the T12 or L1 level. Blockade may be performed from an anterior or posterior approach. This may be accomplished by using anatomical landmarks, fluoroscopy, or CT guidance. Injection of 30 ml to 50 ml of local anesthetic will be sufficient to block the celiac plexus for diagnostic purposes. Neurolytic blocks with alcohol or phenol may be placed with CT guidance with greater precision. The classic example for this is the use of a neurolytic CP block in the treatment of pain associated with pancreatic cancer. Complications which may occur are diarrhea, hypotension, aortic or vena caval injection, renal puncture, and hematoma.

The HGP are formed from fibers from and lumbar sympathetic chain and aortic ganglia. It provides sympathetic innervation to the rest of the colon and the pelvic contents. The HGP is the most diffuse of the ganglia. It is located at the bifurcation of the common iliac arteries which is located at L5. Blockade of the HGP may be performed using anatomical landmarks, fluoroscopy, or CT guidance. Uterine or rectal pain due to unresectable malignancies have been treated effectively with this procedure.

The sympathetic chain itself, may be blocked with fluoroscopic guidance to the appropriate level to affect the ipsilateral side. Lumbar sympathetic blocks with 15 ml to 20 ml of local anesthetic are the most frequent block of this type This would be effective in treating disorders of a single lower extremity. The blockade of a single extremity may be beneficial in the patient who would not tolerate complete sympathetic blockade of both lower extremities that can occur with an epidural or subarachnoid block.

Chronic regional pain syndrome (CRPS), formerly referred to as reflex sympathetic dystrophy or sympathetic mediated pain is an uncommon pain syndrome which usually affects the extremities. CRPS may occur after an injury to the limb. The patient will develop a burning sensation which may or may not follow a specific nerve distribution. They will have hyperpathia, increased sensitivity, and allodynia, pain to a stimulus which is normally without pain. The affected limb has decreased blood flow which may result in decreased temperature and cyanosis. Eventually, there will be loss of hair and skin changes associated with ischemia. The limb becomes painful to move, and even wind blowing on the limb will cause excruciating pain. This leads to immobility, contractures, and loss of bone density. Treatments are aimed at early diagnosis and early aggressive treatment.[18] Sympathetic blocks or IV regional blocks with Guanethidine or Bretylium have been used as treatments for CRPS. Clonidine, an alpha-2 agonist, has also been used with success. Other treatments for neuropathic pain such as the antidepressant and anticonvulsant medications have been used. Physical therapy is an integral part of the patient's care to maintain range of motion and strength. If these modalities fail, implantable devices may be considered.

With advances in technology, dorsal column stimulators (DCS) have become a good therapeutic option in some patients. This may help to prevent a neuroablative procedure. DCS has been utilized in the treatment of failed laminectomies, CRPS diabetic neuropathy, ischemic pain and PHN.[19] Candidates for this therapy will have

failed other more conservative modalities including oral pharmacotherapy, nerve blocks, and TENS. Proper patient selection will be made prior to the implantation with the patient's pain pattern being at the center of *this* evaluation. A OCS electrode has one to eight leads on it, each of which can be programmed positive, negative, or off. The generator itself may also be programmed as one of the leads. The electrode may be placed percutaneously or via a hemilaminotomy. Final position will be attained with fluoroscopic guidance and verbal confirmation with the patient. The patient will have a trial of the DCS for one to two weeks. They should have at least a 50% reduction in their symptoms before deciding on the final placement of the subcutaneous generator. In this regard, there are two systems available. One is completely subcutaneous with the pulse generator/battery unit implanted on the abdominal wall or buttock. There is an external hand held unit to turn the DCS on, off, up, or down within the preprogrammed variables. The other system type has a generator coil implanted subcutaneously with an external telemetry Unit to provide the energy for stimulation. The external unit will utilize 9 volt batteries. Once the electrode has scarred in place, there should be minimal maintenance of the system. The patient should return to physical therapy for rehabilitation.

When the pain pattern covers more than several dermatomes, a DCS would be only partially effective. Spinal opioids would be next in the line of treatment modalities from less invasive to more invasive. Opioids administered into the epidural or intrathecal space have provided analgesia which is superior to that of parenterally administered opioids.[20] Neuraxial opioids have been used in post operative pain, cancer pain, herpes zoster, myocardial infarction, thrombophlebitis, ischemic pain, low back pain, obstetrics, and chronic regional pain syndrome to name a few. Intrathecal and epidural infusion will use much less medication than the oral route. Patients who were unable to take large doses of narcotics due to side effects may be able to tolerate the lower doses with improved pain relief.[21,22] Selection of the narcotic to be used is based on the pharmacodynamics and pharmacokinetics of the narcotic in the intrathecal or epidural space. Onset of action is shorter it the narcotic is more lipophilic, such as Fentanyl.

Morphine is a more hydrophilic narcotic and has a slower onset of action and longer duration of action that the other opioids. Neuraxial opioids may be administered as single shot doses or continuously through a catheter. Adverse effects of spinal opioids may occur at the time of injection. Epidural doses are larger than intrathecal doses by 10 to 16 times, and systemic side effects are more likely in the epidural route. Nonsystemic effects more commonly associated with neuraxial opioids are urinary retention, pruritis, and delayed respiratory depression. Pruritis can be treated effectively with antihistamines or naloxone. This usually disappears after several days. Naloxone and/or catheterization may be used in treating urinary retention. Early respiratory depression may occur from systemic absorption of opioids. Delayed respiratory depression may occur hours after administration of neuraxial opioids due to rostral spread in the cerebral spinal fluid. Although this is very rare, it is more common with hydrophilic narcotics compared to the more lipophilic narcotics. This is easily treated with small doses of Naloxone.

An epidural catheter may be tunnelled subcutaneously to decrease the incidence of infection, or it may be attached to a subcutaneous port. The intrathecal catheter may be connected to a subcutaneous infusion pump (SCIP). Narcotics are usually infused through these systems. Other medications such as Baclofen, Clonidine, and local anesthetics have also been placed in the epidural or intrathecal space via a SCIP. An epidural port infusion would require an external infusion pump and larger volumes with refills one to two times a week. An intrathecal infusion with a SCIP may be refilled every three months. The main consideration in choosing an epidural catheter with a subcutaneous port or intrathecal catheter with a subcutaneous infusion pump would be the life expectancy of the patient. Both modalities are very effective, but the cost of each system varies. The epidural and port system is inexpensive initially, but with time, the cost of medication, supplies, and nursing support will become greater than the cost of the subcutaneous infusion pump. These cost lines cross at approximately three months time. A patient with a life expectancy of three to six months should have an epidural catheter with a port, and a life expectancy of greater than three months should have the intrathecal catheter and subcutaneous infusion pump.

There are many options in the treatment of chronic pain. The majority of patients will respond to the more traditional therapies of oral pharmacotherapy or surgical correction of an anatomic abnormality that causes the pain. Up to 20% of patients will not respond well to these therapies. If these methods are ineffective or they cause adverse reactions, there are other treatment modalities available. Knowledge of these modalities will help to insure the adequate and compassionate care of the patient with intractable pain.

References

1. Raj P, Pai U, Stanton-Hicks M. Epdural. In: Raj P, ed. Practical Management of Pain, 2nd edition. St Louis, MO. Mosby Co; 1992: 766.
2. Cathelin F: Mode d'action de la cocaine injecte daus l'escape epidural par le procede du canal sacre, *Cornptes Rendues des Seances de /a Societe de Biologie et de ses Filiales (Paris) 53:* 478, 1901.
3. Koes BW, Scholten, RJ, Mens JM, et al: Efficacy of epidural steroid injections for low-back pain and sciatica: a systematic review of randomized clinical trials, *Pain* 63(3):279-288, 1995.
4. Baeuerle J. Epidural steroid injection. In: Ramamurthy S, Rogers J, eds. Decision Making in Pain Management. St Louis, MO. Mosby Co; 1 993: 21 2. A. Lester J. Acute low back pain. In: Ramamurthy S, Rogers J, eds. Decision Making in Pain Management. St Louis, MO. Mosby Co; 1 993:1 24 - 1 25.
5. White, AH, Derby R, Wynne G: Epidural injections for the diagnosis and treatment of low back pain, *Spine* 5:78-86, 1980.
6. Harley C: Extradural corticosteroid infiltration. A follow-up study of 50 cases, *Ann Phys Med* 9:22-28, 1967.
7. Heyse-Moore G: A rational approach to the use of epidural medication in the treatment of sciatic pain, Acta *Orthop Scand* 49:366-370,1 978.
8. Green PWB, Burke AJ, Weiss CA, et al: The role of epidural cortisone injection in treatmentof discogenic low back apin, *Clin Orthop* 153:121-125,1980.
9. Warr, AC Wilkinson JA, Burn JMB, et al: Chronic lumbosciatic syndrome treated by epidural injection and manipulation, *Practitioner* 209: 53-59,m 1 972 .
10. Brown, FW: Management of discogenic pain using epidural and intrathecal steroids, *Clin Orthop* 129:72-78,1977.
11. Dilke TFW, Burry HC, Grahame R: Extradural corticosteroid injection in management of lumbar nerve root compression, *Brit Med J* 2:635-637,1973.
12. Snoek W, Weber H, Jorgrnsen B: Double blind evaluation of extradural methylprednisolone for herniated lumbar discs, *Acta Orthop Scand* 48:635-641,1977.
13. Knight CL, Burnell JC: Systemic side-effects of extradural steroids, Anesthesia 35:593-594, 1980.
14. Goebert HW, Jallo ST, Gardner WS, et al: Painful radiculopathy treated with epidural injections of procaine and hydrocortisone acetate: results in 11 3 patients, *Anesth Anal Curr Res* 40:130-134, 1961.
15. Neumann M, Reynolds L. Trunk. In: Raj P, ed. Practical Management of Pain, @nd edition St Louis, MO. Mosby Co; 1992: 748.
16. Myers R, Katz J. Neurolytic agents.In: Raj P, ed. Practical Management of Pain, @nd edition. St Louis, MO. Mosby Co; 1992: 707.
17. Tingle L. Stellate ganglion block. In: Ramamurthy S, Rogers J, eds. Decision Making in Pain Management. St Louis, MO. Mosby Co; 1 993: 242-249.
18. Bonica J. Causalgia and other reflex sympathetic dystrophies. In: Bonica J, ed. The Management of Pain, 2nd edition. Malvern, PA, Lea & Febiger: 235-236.
19. Barolat, G: Current Status of epidural spinal cord stimulation, Neurosurg Quarterly 5(2):98-124, 1995.
20. Rawal N, Amer S, Gustafsson LL, et al. Present state of epidural and intrathecal opiate analgesia - a nationwide follow-up survey in Sweden. *8r J Anaesth* 59: 791-799, 1987.
21. Coombs DW, Saunders RL, Gaylor M, et al: Epidural narcoticinfusion resevoir implantation thechnique and efficacy. *Anesthesiology* 56:469-473, 1982.
22. Onofrio BM, Yaksh TL. Long term pain relief produced by intrathecal morphine infusion in 53 patients. *J Neurosurg* 72:200-209, 1990.

Pain Management: A Synopsis

Joseph Pepping PharmD

Pain is a SUBJECTIVE experience in which psycho-emotional as well as somatic factors have a direct bearing on perception and outcome.

Always ASK the patient to rate his/her pain on a scale of 0-10, zero being no pain at all and 10 being the worst pain they can imagine. BELIEVE the patient when they give you their pain scale rating. If psycho-emotional factors seem to **"exaggerate"** their perception of pain you should be able to use the "power of Persuasion", as well as medications, to effectively decrease the patient's pain.

The most important aspect of pain management is ESTABLISHING A POSITIVE RELATIONSHIP with the patient. You must CONVINCE them that you know what you're doing and that YOU CAN MAKE THEM BETTER. Once you have their trust and support you're half way there.

Next you must GET THEM TO COOPERATE as a "Pain Team Member". They need to know that successful pain management depends on THEM as well as you. Their job is to let you know how effective your therapy plan is working and to ASK for PRN medication when they need it (if inpatients).

Follow up with them OFTEN (daily until stabilized) to let them know you haven't forgotten them and to "fine tune" their pain management regimen.

Chronic Pain

Most pain management consults are for chronic pain cases (cancer, back/spinal pain, AIDS, etc.). The following guidelines are for the chronic pain patient.

Chronic pain management is like building a house. First you lay the foundation, then you frame the house, then you put on the roof.

The Foundation is ALWAYS a non-narcotic analgesic. Use an NSAID unless contraindicated (Hx. of GI bleed, renal compromise, Hx. of allergy, anti-coag Tx.). My NSAIDS of choice are Naprosyn 500 mg Q8H-Q12H with food or Motrin 800 mg Q8H with food. If the patient cannot take NSAIDS then give Tylenol 975 mg (3 tabs) Q8H (unless pt. has severe hepatic problems). These non-narcotics must be given ROUTINELY, not on a PRN basis.

The frame of the house is a SUSTAINED RELEASE OPIOID, preferably morphine sulfate. Our current formulary item is Oramorph-SR 30 mg. To determine HOW MUCH sustained release narcotic to give them you must add up all the current narcotics they are taking and use a DOSAGE CONVERSION CACULATOR to convert to a single agent. I use the one from Jannsen Pharmaceutica Inc., the makers of Duragesic Patches. You simply add up the EQUIVALENT dosages of all opioids that the patient is taking and convert them to the SINGLE agent of your choice. If someone can take medications orally I recommend using Morphine as a first line agent. If they are allergic to morphine or cannot take meds by mouth then use Duragesic (which is more cumbersome and much more expensive).

Sustained release opioids are ALWAYS taken ROUTINELY, never PRN.

The roof of our pain management house is an immediate release opioid for breakthrough pain. You must ALWAYS give chronic pain patients an agent for breakthrough pain, NO EXCEPTIONS. Try to use the same agent as the sustained release medication. My favorite is Morphine 15 mg sublingual tablets by Lilly. They are very small, rapidly absorbed under the tongue, fast acting and can be given to patients who are basically NPO. The dosage of the immediate release narcotic should be one-third to one-half of the dose of the sustained release narcotic.

For example, if your patient is taking Oramorph-SR 30 mg Q8H, the MSIR dose would be 15 mg SL QI-2H prn. If he/she is taking Oramorph-SR 60 mg Q6H, the MSIR dose would be 15-30 mg QI-2H prn.

Dosage Adjustments: Have the patient note on a calendar the amount and time of day that he/she takes any breakthrough pain meds. This will give you an idea when the pain is worse on a 24 hour cycle. The GOAL is to have a patient take no more than 3 doses of breakthrough narcotic per day. Your job is to add up all the breakthrough doses in 24 hours and "convert" one-third to one-half of this into the sustained release narcotic.

For example: If your patient is taking Oramorph-SR 30 mg Q8H and he/she is taking between 60-90 mg of MSIR per day (4-6 15 mg SL tabs) you would increase his/her Oramorph dose to 60 mg QI2H.

Important notes

• Individualize and adjust the route, dosage, and schedule as needed to obtain a consistent pain scale rating of 2-3.

• Always administer analgesics ROUTINELY for chronic pain patients.

• Give infants and children adequate opioid doses.
Follow patients closely (daily by phone, etc.), particularly when beginning or changing analgesic regimens.

• When changing from one opioid to another, use equi-analgesic doses, then modify the dosage based on the clinical situation and response to the new medication.

• Recognize and treat side effects: NSAIDS: GI bleed, gastritis, platelet inhibition. Opioids: obtundation (rare with chronic narcotic users), mental status changes (more common with Duragesic), itching (all narcs), and constipation (all narcs). For constipation I suggest starting with 6-8 dried prunes a day and titrating up to a bowel movement at least every other day. If prunes are not effective,

don't stop them, just add Lactulose 30 ml BID until the "great movement" occurs, then back off to QD until stools loose, then DlC (but keep taking the prunes).

• Never use mixed agonists-antagonists (Talwin, Stadol, etc.). Never use Demerol in patients with ANY kind of renal compromise. Never use Darvocet **or** Tramadol (Ultram).

• Don't use placebos to assess the nature of pain.

• The worse the pain is, the more difficult to alleviate and the more narcotics you'll have to use initially to alleviate it. Urge patients to take their breakthrough meds at the first signs of "discomfort" (above the 2-3 pain scale) and not to wait until they can't stand the pain.

• Watch for the development of tolerance and treat appropriately.

• Be aware of the development of physical dependence and prevent withdrawal by assuring the patient has an adequate supply of narcotics. When you wean them, do it slowly; keeping the pain scale rating at 2-3 throughout the process.

• Do not label a patient "addicted" (psychologically dependent) if you merely mean physically dependent on, or tolerant to, narcotics. "Drug Seeking Behavior" is VERY different from physical dependence.

• If signs and symptoms of DEPRESSION persist after adequate pain management is obtained then treat with SSRI's or other appropriate agents.

Commonly Prescribed Adult Doses of Oral Analgesics

General Philosophy

Whenever possible in cases of acute pain, and <u>always</u> in cases of chronic pain, use non-narcotic analgesics as a base. Use routinely when appropriate.

Non-Narcotic Analgesics (mild to moderate pain).

NSAIDS (the best due to anti-inflammatory effects). Always given with food.

Ibuprofen (Motrin, Advil):
400-800 mg q6h prn. Use routinely for first 24-48 hours in acute pain cases, then PRN. Use routinely in chronic pain patients unless contraindicated.

Naproxen (Naprosyn, Alleve):
500 mg BID. Personally I like 500-750 mg BID but this exceeds "traditional" dosing. Use routinely in chronic pain patients unless contraindicated.

Acetaminophen (Tylenol, APAP):
Often included in narcotic analgesics for synergistic effects. Not as effective as the NSAIDS, but fewer serious side effects like GI bleeding. Remember: maximum daily dose is 4 gms in adults.

Narcotic Analgesics (moderate to severe pain).

Many physicians <u>underprescribe</u> narcotics due to fear of addiction (which is extremely rare) and lack of pain management understanding.

Remember: Pain is a very <u>subjective</u> and variable phenomenon, you have to believe and accept your patients' assessment of their pain; and treat accordingly

Remember: The most difficult situation in pain management is to have to play "pain catch up", that is, to initially underprescribe analgesics, then try to alleviate the pain you could have dealt with more appropriately from the beginning.

Darvocet N-100 (propoxyphene/APAP) Ineffective. Do not recommend.

Tylenol w/Codeine (APAP 325 mg w/Codeine, TC#2 = 15 mg, TC#3 = 30 mg, TC#4 = 60 mg). (TC#3 is most common) 1-2 tabs Q4-6H pm pain. An effective analgesic for moderate pain. Limited in use by codeine side effects of nausea/vomiting, and mentation changes.

Vicodin (APAP/Hydrocodone) 1-2 tabs Q4-GH prn pain. More powerful than Tylenol w/Codeine. Has the advantage of not requiring a C-II duplicate Rx.

Percocet (APAP/Oxycodone) Moderate:1 tab Q3-4H prn pain. Severe:1-2 tabs 04h prn pain. The gold standard of narcotic analgesics for more severe pain. Excellent pain relief with few side effects. Percocet's disadvantage is that it requires a C-II duplicate Rx. Do not hesitate to use in cases of moderate to severe pain.

Morphine (immediate release) 15 & 30 mg tabs. 15-30mg SL Q3-4H prn pain.Very useful in cases of severe pain that does not respond to Percocet. Advantage is that Lilly makes a sublingual tablet that can be given to patients with nausea/vomiting or restricted PO intake. May use in very high doses for patients with significant narcotic tolerance.

Sustained release Morphine. Only used in chronic pain mgmt. Usually dosed Q8H routinely. Recommend MS Contin, which comes in 15, 30, 60, 100 and 200 mg strengths (each color coded to minimize dosing errors) or Oramorph-SR. No maximum dose.

Duragesic Patch (Fentanyl). Only used in chronic pain mgmt. Usually dosed Q72H. Comes in 25, 50, 75 and 100 mcg/hr patches. Max. dose approx. 400 mcg/hr.

Continued on p. 103

Pain Resources for the Hawaii Practitioner

Hob Osterlund, RN, MS, CHTP
Clinical Coordinator, Pain Management Services, The Queen's Medical Center

Pain management is often complex and always multifactorial. Culture, emotional state and previous pain experiences all play a part in a person's response to a painful stimulus. Since these and many other factors are difficult to predict and measure, the practitioner is often left with confusion as to the best treatment option. Access to education is one key to optimal choices. If the practitioner has had minimal exposure to current principals in cancer pain management, for example, he or she may still have concerns about the patient 's potential for drug habituation. The debate over use of opiates in chronic nonmalignant pain may leave the practitioner in an "either/or" mindset, uncertain how to individuate pain management specifically for each patient. Resources for the Hawaii practitioner are listed in an attempt to support skilled pain management in Hawaii.

Home Infusion Agencies

Home Care Hawaii, LLP
Home pain management infusions
All islands:, 677-1288

Infusion Services of Maui
Home pain management infusions
Maui: 871-5894

Intravenous Therapy Specialists (ITS)
Home pain management infusions
All islands: 836-0365

Kuakini Infusion Service
Home pain management infusions
Oahu: 547-9456

Pharmacare
Home pain management infusions
All islands: 488-9446

Wailuku Professional Pharmacy
Home pain management infusions
Maui: 244-9099

Hospices

Hawaii State Hospice Network
Stephen A. Kula
924-9255

Hospice Hawaii
At-home and inpatient hospice pain consultations
Barbara Shirland, RN, CRNH
Oahu: 924-9255

Hospice of Hilo
At-home hospice pain consultations
Brenda Ho
Hawaii: 969-1733

Hospice of Kona
At-home hospice pain consultations
Ellen Schumann, RN,C
Hawaii: 334-0334

Hospice Maui, Inc.
At-home hospice pain consultations
Gregory LaGoy, ND
Maui: 244-5555

Kauai Hospice
At-home hospice pain consultations
Kathleen Boyle
Kauai: 245-7277

North Hawaii Hospice
At-home hospice pain consultations
Nancy Bouvet
Hawaii: 885-7547

St. Francis Hospice
At-home and inpatient hospice pain consultations
Pat Kalua, RN, BSN, MAOM
Oahu: 595-7566

Medical Centers

Kaiser Medical Center
Inpatient and outpatient consultations
Joe Pepping, Pharm.D.
834-9190

Kapiolani Medical Center for Women and Children
Inpatient and outpatient consultations
Alan Britten, MD
Chair, Pain Management Team
973-8597

St. Francis Medical Center
Inpatient consultations
Amy Krueger, RN, MSN, FNP
547-6109

St. Francis Medical Center West
Clifton Liu, Pharm.D.
678-7035

Straub Clinic and Hospital
Anesthetic approaches to malignant and non-malignant pain, Jerry Prentiss, MD
Neurosurgical approaches to malignant and non-malignant pain, Yoshio Hosobuchi, MD
522-4000

The Queen's Medical Center
Inpatient consultations
Jeffrey S. Wang, MD, Medical Director
Hob Osterlund, RN, MS, CHTP, Clinical Coordinator, Pain Management Services
Lydia Kumasaka, RN, MS, Clinical Nurse Specialist
Joan Maeshiro, RN, Instructor
Lynn Kobashigawa, RN, Instructor
547-4726

Tripler Army Medical Center
Inpatient and outpatient consultations
Lynn Dahl, MD
433-1323
Inpatient pain management nurses
549-5667 (beeper)

Speciality Services

Cancer Information Service
Source of latest information regarding pain management for professionals and lay public, supportive care clinical trial and protocol searches, outreach for programs to the medically underserved
1-800-4-CANCER

Hawaii Cancer Pain Initiative
Speakers' Bureau for professional and lay cancer pain education
Barbara Shirland, RN, CRNH
Chair, Executive Council
924-9255

State Narcotics Enforcement Division
Information about legal guidelines, Uniform Controlled Substance Act, licensing, suspected drug-seeking behavior, pharmacy alerts
Keith Kamita
594-0150

Publications and Organizations

***Agency for Health Care Policy and Research (AHCPR)* publications:**
Acute Pain Management in Adults: Operative Procedures (AHCPR92-0019)
Acute Low Back Problems in Adults (AHCPR95-0642)
Management of Cancer Pain (AHCPR94-0592)
Managing Cancer Pain: Patient Guide (AHCPR94-0595)
Pain Control After Surgery: A Patient's Guide (AHCPR92-0021)

AHCPR Publications Clearinghouse
P.O. Box 8547
Silver Spring, MD 20907-8547
800-358-9295

Alternative Therapies in Health and Medicine
Innovision Communications
101 Columbia
Aliso Viejo, CA 92656

American Academy of Hospice and Palliative Medicine
P.O. Bos 14228
Gainesville, FL 32604
(352)377-8900
(352)371-2349 Fax
aahpm@aahpm.org
web: www.aahpm.org

American Academy of Pain Management
13947 Mono Way #A
Sonora, CA 95370
209-533-9744
Annual certification examination in pain management
Recommended text for examination: Pain Management: A Practical Guide for Clinicians
Volume I and II
St. Lucie Press
561-994-0555
information@slpress .com

American Journal of Hospice and Palliative Care
Prime National Publishing Corp.
470 Boston Post Rd.
Weston, MA 02193
800-869-2700

American Pain Society (APS) Publication: *Principles ofAnalgesic Use in the Treatment of Acute Pain and Cancer Pain* (handbook)
American Pain Society
4700 W. Lake Ave.
Glenview, IL 60025
708-375-4715

American Society of Pain Management Nurses (ASPMN)
7794 Grow Drive
Pensacola, Florida 32514
(8 88)34ASPMN
(850)484-8762 Fax
ASPMN@aol.com

Analgesia: A Journal of Pain Therapy for Health Care Professionals
Abbott Laboratories
200 Abbott Park Road
Abbott Park, Illinois 60064
Complementary Medicine for the Physician
Churchill Livingstone, Inc.
650 Avenue of the Americas
New York, NY 10011
800-553-5426

International Association for the Study of Pain
909 NE 43rd St. #306
Seattle, WA 98105
(206)547-6409

Journal of Pain and Symptom Management
Elsevier Science, Inc.
655 Avenue of the Americas
New York, NY 10010
888-437-4636

Pain: The Journal of the International Association for the Study of Pain
Elsevier Science Publishers B.V.
P.O. Box 211
1000 AE Amsterdam
Netherlands
nlinfo-f@elsevier.nl

Palliative Care Newsletter
Roxane Laboratories
P0 Box 16532
Columbus, Ohio 43216
614-276-4000 ext 2287
614-276-8061 fax

Resources on the Internet

Agency for Healthcare Policy and Research
Lists various resources on pain and cancer pain

http://www. ahcpr. gov/cgi-bin/allsrch.pl
Http://www.ahcpr.gov/(HOME PAGE)

American Cancer Society, National Cancer Institute
Questions and answers about pain control

http://nysernet.org/bcic/nci/adult.pain.4518/pain. control .html

Roxane Pain Institute
Educational materials on cancer and AIDS pain management

http://www.Roxane .COM/Roxane/PRI

The International Association for the Study of Pain
Dictionary of pain terminology; outline for curriculum on pain in medical schools

http://weber.u.washington.edu/~crc?iasp .html

University of Iowa College of Nursing
Cancer pain education for patients and families

http://coninfo.nursing.uiowa.edu/www/nursing/virtnurs/cncrpain/toc.html

Worldwide Congress on Pain
Pain management educational web site

www.pain.com

Pain Glossary

Narcotic
"Narcotic" is a legal, not a scientific term which denotes some of the drugs that are controlled under the Single Convention on Narcotic Drugs, 1961, and the U.S. Controlled Substances Act (CSA). Under the Single Convention and CSA, substances such as the opioids are classified as narcotics. Marijuana and cocaine are also legally classified as "narcotics." When discussing pain relief, we avoid use of "narcotic", preferring "opiate" or "opioid".

Opiate
"Opiate" refers to drugs whose origin is the opium poppy, including codeine and morphine.

Opioid
"Opioid" is a scientific term denoting both natural (codeine, morphine) and synthetic (methadone, fentanyl) drugs, and whose pharmacological effects are mediated by specific receptors in the nervous system. "Opioid" also applies to agonists and antagonists with morphine - like activity.

Tolerance
"Tolerance" refers to the physical adaptation of the body to an opioid resulting in the need to increase the dose to achieve the same effect, as in "analgesic tolerance", or as in the reduction in a response (such as sedation) with repeated administration of drug.

Physical dependence
"Physical dependence" also describes the physical adaptation of the body to the presence of an opioid; it is characterized by signs of withdrawal when use of an opioid is stopped abruptly, or when an opioid antagonist is administered to an individual who has been on chronic opioid therapy.

Psychological dependence
"Psychological dependence" is a behavioral pattern characterized by a compulsion to obtain a drug for mood altering effects.

Addiction
"Addiction" is a sociologic term which refers to compulsive drug use, psychological dependence, and continuing use despite harm. Neither physical dependence nor tolerance are sufficient to define "addiction." In the past as well as in present day language "addiction" is frequently and incorrectly equated with physical dependence and withdrawal. "Addiction" and related terms such as "addict" are used in narcotic control laws and are sometimes inappropriately defined to include physical dependence, thereby confusing pain patients with addicts.

Cancer Pain Relief, Second Edition, With a guide to opioid availability, World Health Organization, 1996.

Continued from p. 100

Remember: Whenever you are using a sustained release narcotic analgesic you must write additional orders for immediate acting narcotics for breakthrough pain.

Equivalencies:

Narcotic	Equi-analgesic Dose (Only oral potencies listed)	
Codeine	60 mg	
Morphine	15 mg	all values approximate
Hydrocodone	10 mg	
Oxycodone	7.5 mg	

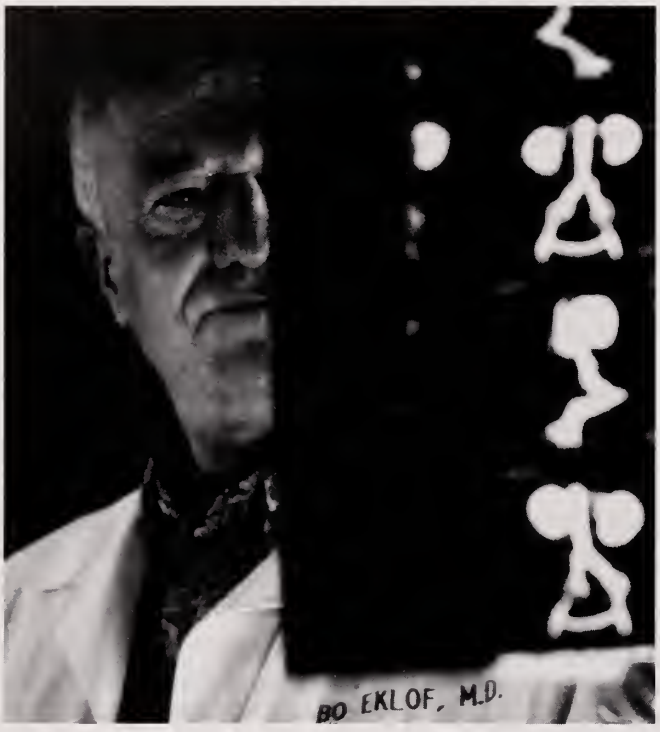
Duragesic 25 mcg = 30-60 mg oral morphine

Editor's Note

Joseph Pepping PharmD, is Pharmacist in Charge Decentralized Services and Pain Management Consultant with Kaiser Permanente Moanalua. Joe was a member of our Pain Task Force of the Governor's Blue-Ribbon Panel. In addition to serving as a Pain Management Consultant, he is very interested in herbs and natural supplements as complementary adjuncts to our allopathic treatments. Mahalo, Joe.

Norman Goldstein MD, Editor

Join us in the quest for continued medical excellence.



Join your Straub colleagues as we strive for continuing medical excellence.

Straub Clinic & Hospital, Inc. is accredited by the Hawaii Medical Association to sponsor continuing medical education for physicians.

Straub designates this educational activity for a maximum of one credit hour in Category 1 of the Physician's Recognition Award of the American Medical Association. Each physician should claim only those hours of credit that he/she actually spent in the educational activity.

Straub

Partners in health

*straub*health.com

You are invited to attend...

– Friday Noon Conference –

Anatomy of a Medical Malpractice

Frank L. Tabrah, MD

April 14, 2000, 12:30 - 1:30 p.m.

Doctors Dining Room

Learning Objectives

At the conclusion, participants will be able to:

- Describe your role as the defendant and the various outcomes on how this claim can/will be settled.
- Gain knowledge on how to deal with a malpractice suit. Understand the entire process of how a simple patient complaint could turn into a claim against a practitioner.
- Recognize the red flags signaling a potential claim.

– Friday Noon Conference –

Environment of Care 2000: Safety Issues that Impact Physicians

Kevin Matsukado, Norma Cassity, Clayton Takara, & Michelle Fisher

April 21, 2000, 12:30 – 1:30 p.m.

Doctors Dining Room

Learning Objectives

At the conclusion, participants will be able to:

- Understand/identify infection control, tuberculosis, and bloodborne pathogens.
- Gain knowledge in radiation safety procedures, and prevent back injuries.
- Summarize emergency procedures: how to report unsafe conditions and suspicious activities, how to use a fire extinguisher, plan red, and the 5 phases of plan blue.

– Friday Noon Conference –

Weight Loss Agents

John Spangler, MD

April 28, 2000, 12:30 - 1:30 p.m.

Doctors Dining Room

Learning Objectives

At the conclusion, participants will be able to:

- Identify the herbs and supplements being sold over the counter for weight loss.
- Review relevant scientific information about the effectiveness and safety of these agents.
- Formulate a coherent treatment plan for the patient seeking to lose weight with the aid of over the counter supplements.

Please call Fran Smith at 522-4471 for more information.

March to a different drummer.



www.maximahawaii.com

NISSAN

DRIVEN.

New City Nissan - Ala Moana 524-9111 • Tony Nissan - West Oahu 671-2611 (Waipahu) • Tony Nissan - Pearl City 487-1133
Infiniti - Nissan Motor Sales - Honolulu 836-0848 (Airport) • King Windward Nissan - Kaneohe 235-6433
Cutter Nissan of Maui - Kahului 877-9009 • Kauai Nissan - Lihue 245-6731 • Kamaaina Nissan - Hilo 935-3741 • Kona Auto Center - Kona 329-4408

Hot Spots In Dermatology 2000

Clinical Dermatology
Coding & Computers In Medicine

August 18 - 20, 2000
Manele Bay Hotel
Island of Lanai

Exploring the present & future of informatics in your practice. Productive updates on billing & coding. Cutaneous medicine.

Dr. Douglas Johnson
Dr. David Elpern
808-531-7541

dwjohnson@pol.net
kauai@bcn.net
http://come.to/hotspotslanai

Janssen Pharmaceutica

Is proud to support the Hawaii Medical Journal

World leader in antimycotic research

JANSSEN • PHARMACEUTICA • • RESEARCH FOUNDATION •

Titusville, NJ 08560-0200

®1998 Janssen Pharmaceutica

Aloha Laboratories

...when results counts

A CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

- Surgical Pathology
- Dermatopathology
- Cytopathology
- Gynecologic Pathology
- Frozen Sections

David M. Amberger, M.D.
Laboratory Director

2036 Hau Street, Honolulu, HI 96819
Phone (808)842-6600
Fax (808)848-0663
ALOHALABS@WORLDNET.ATT.NET

Arleen D. Jouxson, Esq.
Attorney at Law



A.K.A. Arlene Meyers, MD, MPH

- Wahiawa pediatrician since 1979
- Associate Clinical Professor, JABSOM
- 1998 Roscoe Pound award winner in health care law
- President & founder of the Hawaii Coalition For Health

NEED HELP?

- with Par. Agreements?
- Understanding health care laws?
- Resolving disputes with health insurers?

CALL 621-8806 (Oahu) for more information or for a free initial consultation at your place of business.

302 California Ave., #209, Wahiawa, HI 96786, Ph: 621-8806; Fax: 622-5599

News and Notes Henry N. Yokoyama MD

Life in these Parts...

Dr. Laura Gets In to A Patient's Head...

A 23 year old Salt Lake woman was at St. Francis Medical Center for surgical removal of a benign golf-ball-sized brain tumor (by world renown neurosurgeon Takamori Fukushima from Duke University). When the doctors switched on an "evoked potential machine" which detects electrical activity in neurons, Dr. Laura's popular program came on...The St. Francis staff called KHVH and the station reduced its 10,000 volts to 2500 volts so the surgery could proceed without Dr. Laura's moralizing voice.

Millennium Predictions by Eddie Sherman

"Dermatologist Norm Goldstein opens a Niihau Clinic — 'Pimples R Us'...Hawaii is often acknowledged as the islands of romance, but one —Niihau—is the last repository of unsullied Hawaiiana..."

Life in these Parts...

Ah Quon McElrath, non-lawyer and retired social worker with International Long Shore and Warehouse Union was presented the Hawaii Women Lawyer's "Life Time Achievement Award"...AQ was recognized for her dedication to advancing the rights of workers and her activism on community issues, including health care and criminal justice. The award recognized AQ's involvement in advocating legislation for hospice care, abortion rights, repeal of the death penalty and issues involving the poor. AQ was also influential in the Governor's blue ribbon panel on dying with dignity...

Conference Notes...

"Preventing the Complications of Diabetes" Todd Kaye, MD; Jan 20, 2000. Camine Medical Group... The Queen's Physician Group Foundation and Pfizer.

Introduction: Diabetes is the leading cause of blindness, end stage renal disease, lower extremity amputation and 2 to 4 times higher CVD...

Prevention Macrovascular Disease:

a. Aggressive lipid control
b. BP control
c. Daily ASA
d. Stop Smoking
e. Tight glycemic control

Cholesterol Management in Type II:

a. All type II should be on a low fat diet
b. Without CAD, CVD or PVD: Initiate drug Rx if LDL>130; aim for LDL<100.
c. With CAD, CVD or PVD: Aim for LVL<100.

Type II & CHD:

a. Non-Diabetic: 3.5 to 18.8% MI
b. Diabetic: DM, No MI: 28.2% MI...
DM c̄ MI: 45.0% MI...

***Cut out red meat, alcohol, smoking, sex and sports...Then we can treat your resultant depression...(Joke)

Lipid Lowering Agents in DM:

a. Niacin not well tolerated
b. Bile Acid Sequestrants: raises triglycerides
c. Fibric Acid Derivatives: ↓triglyceride & ↑HDL; ±↓LDL
d. HMG-Co A ↓↓LDL; ±↑triglycerides; ±↑HDL (Six statins available for DM Patients; Recommend Mavacor, Pravachol and Zocor, but Lipitor is most potent for ↓LDL...

Lipitor ↓LDL	10mg, ↓41	20mg, ↓44	40mg, ↓50	80mg, ↓61

Prevention Macrovascular Disease:

a. Keep BP < 130/85: ↓renal disease, ↓retinal complication; ↓CVA; ↓cardiovascular events...

Prevent Diabetic Nephropathy:

a. Tight glycemic control
b. Tight BP control
c. Low protein diet
d. Use ACE (renal protection) or Ca CB (renal protection)
e. ARB's

Hypertensive Agents Beneficial to Diabetes: Goal: <130/80

Agents	Studies
Thiazides	SHEP
B Blockers	V1CPDS
ACE	STEP: UKDPS
CaCB	HOT: Sys EUR

MI Prevention c̄ ASA:

U.S. Physician Health Study (Sub group analysis c̄ DM pts)
61% relative risk reduction c̄ ASA

Improved Control (Kumamoto Study)

a. Retinopathy: 65%↓
b. Severe retinopathy 40%↓
c. Overal risk nephropathy: 70%↓
d. Microalbuminurea: 57%↓
e. Combined cardiac, CVA, Peripheral vascular events: 54%↓

UKPDS:

a.Microvascular end points: 25%↓
b. MI: 10%↓

Goals Glycemic Control:

Normal: <4-6%
Aim: <7%
Alternative Goal: < > 8%

Potpourri...

An 80 year old couple was having problems remembering things. Their doctor checked them out and tells them they were physically okay, but wants them to start writing things down to help them remember.

Later that night while watching TV, the old man got up to go to the kitchen...

The wife asks, "Will you get me a bowl of ice cream?"

"Sure," he replies.

She then says, "Don't you have to write it down so you can remember it?"

He says, "No, I can remember that."

She then says, "Well I also would like some strawberries on top. You better write that down so you can remember it?"

He replies angrily, "I don't need to write that down." And storms into the kitchen...

About 20 minutes later, he returns from the kitchen with a plate of bacon and eggs. She stares at the plate for a moment and says, "You forgot my toast."

Patsy Matsuura, RN (from Hilo)

Potpourri...

My sister is an assistant in a psychologist's office and as he makes rounds in several institutions, she's frequently required to contact him on a pager...

One particularly stressful morning, she made numerous attempts to contact the doctor without response.

He finally walked in late in the morning, frustrated by the number of messages piled up.

"Why didn't you page me?" he asked sternly and my sister replied that she had paged him many times. He had worn his pager all morning. He reached in his pocket and tossed an object on the desk.

"Check the batteries — Maybe that's the problem." On my sister's desk lay the doctor's TV remote control.

Conference Notes...

"Altering the Natural Hx of Type II... Reducing the Burden of Macrovascular Disease." Steve Edelman, Associate Prof of Medicine, UC San Diego... KMC PB4, 2/4/2000.

Introduction: Diabetes is an epidemic esp between the ages 65 and 74. Diabetes is a continuum...We must pick it up early...

Progression of Type II:

Genetics → Insulin Resistance ← Obesity, Sedentary, Aging
↓
Hyperinsulinemia
↓
Compensated Insulin Resistance
↓
Normal Glucose Tolerance
↓
Impaired Glucose Tolerance
↓
Genetics → ↑hepatic glucose output → B Cell Failure ← Acquired Glucose Toxicity
↓
Type II Diabetes

Discussion: Sulfonylureas are no longer first line therapy...The first line therapy is Glucophage, Insulin sensitizers and CHO Inhibitors...
**Sulfonylureas are unphysiologic viz they cause weight gain, hypoglyemia, Beta cell exhaustion, and accelerate atherosclerosis...Sulfonylurea failure occurs within 5 years...

Lipid control in Type II: Keep TC<200; HDL>45; LDL<130 acceptable; <100 optimal; Triglycerides<200; <150 optimal; BMI<25

Troglitazone Rx:
a. Troglitazone increases the size of LDL
b. Decreases visceral fat distribution in Type II
c. Improves cardiac function by increasing cardiac output and stroke volume.
d. Reduces diastolic pressure in HTN
e. Statistics: - 37% reduction in microvascular events
- 44% reduction in strokes
- 60% reduction in heart failures

re Idiosyncratic Hepatic Damage with Troglitazone...(Diagnosis by ALT eleviation)
a. 1.8 million people on Rezulin
b. 90% of cases occur in the first 3 to 8 mos.
c. No relation to gender and age.
d. No incidence after 11 months.

Prevention of Macrovascular Disease in Type II:
a. Keep HBALc < 7%
b. Treat hyperlipidemia and hypertension
c. Put patient on ASA

Potpourri...

The young Scotsman went to study at an English University and was living in a residence hall with other students. After he had been there a month, his mother came to visit, "How do you find the English students, Donald?" she asked.

"Mother," he replied, "They're such noisy people. The one on that side keeps banging his head on the wall and the one on the other side screams all night."

"How do you manage to keep up with such noisy neighbors?"

"I ignore them." he said, "I just mind my own business, playing my bag pipes."

Potpourri...

The Manager of a megastore checked on his new salesman... "How many customers did you serve today? The manager asked...

"One," replied the new guy. "Only one?" said the boss. "How much was the sale?"

The salesman answered, "$58,334."

The manager was flabbergasted and asked him to explain.

"First I sold the man a fish hook. "The salesman said. "Then, I sold him a rod and reel." Then I asked him where he was planning to fish and he said down the coast. So I suggested he'd need a boat – he bought the 20 foot runabout. When he said his Volkswagon might not be able to pull it, I took him to our automotive department and sold him a big SUV."

The amazed boss asked, "you sold all that to a guy who came in for a fish hook?"

"No," the new salesman replied... "He actually came in for a bottle of aspirin for his wife's migraine." I told him, "Your weekend's shot... You probably should go fishing."

Potpourri...

His First Time... The gastroenterology service had just acquired two new first year residents... The first day was high-lighted by spending the entire morning assisting with 20 sigmoidoscopies... One of the young residents was handed the sigmoidoscope after watching the staff gastroenterologist perform one. His wildest dream had come true: he was about to perform his first sigmoidoscopy. He maneuvered the exam table so the patient was on the "bottom up" position and draped properly. He picked up the sigmoidoscope and aimed it... After a minute or two getting the scope properly pointed, the resident bent over to look and he was amazed to see a large polypoid mass!

"This is a large rectal polyp!" he reported to the staff man and moved aside for the staff gastroenterologist to verify the finding. The staff man peered into the scope and exploded, "You idiot! That's her cervix!"

Dr. Cathy Page

Court Jesters...
(Confusion In Court About Names)

"What's in a name? That which we call a rose... By any other name would smell as sweet"
William Shakespeare

"Believe me, in a court of law, names can cause no end of confusion and consternation for judges, lawyers, and court reporters who have to know who the hell is who..."

Q: Where do you live?
A: 2442 Oseawotamie Street
Q: How do you spell that street?
A: "S-T-R-E-E-T"

Q: Other than traffic court convictions, have you ever pleaded guilty to or been convicted of a felony or misdemeanor?
A: Mr. Who?
Q: Misdemeanor
A: Who's Mr. Meanor?

Q: Where do you live?
A: I moved.
Q: Do you have a middle name?
A: No, I lost it.

Q: Did you see any other doctors at the time?
A: Yes, the neck doctor I went to see was a Dr. Lowell.
Q: Is that the first name or last name?
A: Last name. I don't know his first name... His first name is doctor.

"What's in a name?" one asks again. Andrew Le Mesurier, a lawyer in St. John, N.B. advised me in that city, in Dec 1985, a man named Outhouse was sentenced to 30 days in jail for stealing three cases of ExLax.

Medical Tid Bits...

The popular heart burn drug Propulsid can cause dangerous irregular heart beats and even sudden deaths, according to a recent FDA report. The FDA warning suggests that patients should be put on Propulsid only after an EKG... The FDA warning comes in the wake of 70 deaths and 200 other reports of irregular heart rhythm since 1993.
Advertiser Jan 25, 2000

JAMA reports that menopausal women on estrogen and progestin have a 20% higher risk of breast cancer than those on estrogen alone... When research in the 1980's linked estrogen to uterine cancer, progestin was added to block the estrogen effect on the uterine lining.

The study gathered data from 46,355 women participating in a nation wide breast cancer screening project from 1980 through 1995. The survey identified 2,082 breast cancer cases...

At an American Society of Anesthesiologist's conference, Dr. Charles McLesky reported on a survey of 979 presurgical patients. 17% said they took one or more herbal products. The most common, Ginko biloba, garlic and ginger — all of which prevent clot formation. Two others, St. John's wort and kava kava may prolong anesthetic's sedative effect. The ASA suggests that patients stop taking such products at least two

JEFFREY S. WANG, MD

HONOLULU PAIN MANAGEMENT CLINIC

Medical Office Bldg., Suite 400
2228 Liliha Street
Honolulu, HI 96817
808-528-3657 Fax 808-524-6552

Specializing in:

Epidural Injections
Nerve Blocks
Spinal Cord Stimulators
Intrathecal Infusion Pumps
Back and Neck Pain
Cancer Pain
Complex Regional Pain Syndrome
Post Herpatic Neuralgia

Second Office:
Aiea Medical Bldg., Suite 209
99-128 Aiea Heights Drive
Aiea, HI 96701

Continued from p.87

which will challenge the emerging demands in medical education. They recognize that new discoveries that lead to the accumulation of new facts are not enough. Those discoveries should lead to changes in the kind and quality of patient care that can be provided by a new generation of physicians.

The information age has forever altered the speed at which new knowledge in the biomedical scinces can be shared and evaluated. With our new program, we will be able to eagerly anticipate improved standards of medical care, rather than cope with or react to changes as they come about.

Nurses the  *of Healthcare*

Registered Nurses, Licensed Practical Nurses, Medical Assistants

Qualified and experienced in a wide variety of job settings.

All applicants carefully screened and matched to your specific job.

We are fully responsible for payroll, taxes, benefits and insurance.

Kahu Malama Nurses, Inc.

Short & Long Term Staff Relief and Permanent Placement

Serving Hawaii since 1982 — *Available 24 hours*

(808) 951-0111 Fax: 949-3834 — **Inter-island: 1-800-773-9021**

e-mail: nurses@kahumalama.com

Department of Human Services
Notice to Bidders

The Department of Human Services, Vocational Rehabilitation and Services for the Blind Division, Disability Determination Branch, is soliciting proposals from internists, psychiatrists, orthopedists, physiatrists and psychologists to perform examinations on claimants who have applied for Social Security and Supplemental Security disability benefits. The examinations are to be performed at the office of the consultant. Services are needed statewide. Maximum payment for a single medical examination is $149.76 inclusive of all taxes. Maximum payment for a personality assessment or intelligence assessment is $149.76, inclusive of all taxes. Maximum payment for a complete psychological examination is $299.52, inclusive of all taxes.

Applicants must be State licensed and not currently excluded, suspended, or otherwise barred from participation any Federal programs or State programs. A copy of the Request for Proposal which defines the general terms and conditions may be obtained by contacting Cynthia Lefever, Administrator, by telephone Monday-Friday between the hours of 9:00 am - 4:30 pm at (808) 944-8755 extension 224 from Oahu or at 1-800-362-1526 extension 224 from the neighbor islands.

Proposals must be received no later than 4:30 pm on March 23, 2000 at the Disability Determination Branch.

Classified Notices

To place a classified notice call 536-7702.

Office Space

ALA MOANA BLDG.– PHYSICIANS WANTED to share space and support services. Interest in physical rehab. preferred. We have flexible rental arrangements starting at one half-day per week . Run your practice with no fixed overhead. Contact Dr. Speers, REHABILITATION ASSOCIATES, 955-7244.

Locum Tenens

BOARD CERTIFIED FAMILY PRACTICE.– 15+ years caring clinical experience in Hawaii. Office coverage for 1/2 days, own MIEC Policy, fee flexible, call anytime Deborah C. Love MD: Home Oahu: (808) 637-8611; Cell Ph: 295-2770.

ANESTHESIOLOGIST.– SERVICE AVAILABLE, LOCUM TENENS, General Practice from March 1, 2000 to March 30, 2000. Anesthesiologist with 3 years US approved residency training seeks Full-Time or Part-Time position. Contact person, J Du Preez, Phone: +61 2 66581411 Australia. Call after 1600hrs Hawaiian time or e-mail: kosie@compuserve.com

Wanted

KAUAI.– SEEKING A BC/BE FAMILY PRACTICE PHYSICIAN for the Garden Island. Full-spectrum family practice including inpatient and urgent care work, OB optional. Reasonable call schedule. Kauai Medical Clinic is a 60-physician multispecialty medical group affiliated with Wilcox Health System's 185-bed community hospital. This outstanding opportunity offers excellent quality of life in a safe, beautiful, family oriented rural community. Competitive salary, benefits and relocation package. Send/fax CV to: M. Keyes-Saiki, Kauai Medical Clinic, 3-3420 Kuhio Highway, Suite B, Lihue, HI, 96766-1098. Fax (808) 246-1625. E-mail: mkeyes-saiki@wilcoxhealth.org

PRIMARY CARE PHYSICIAN.– F/T or P/T physician needed for primary care practice in Waipahu. Competitive salary. Great opportunity. Immediate opening. CALL OFELIA AT 671-3911.

PSYCHIATRIST.– Kaneohe residential Program for adolescents seeks consultant two half-days per month. Schedule, duties, compensation negotiable. Contact Administrator: RAINBOW HOUSE 239-2399.

For Sale

FOR SALE.– PEDIATRIC EXAM TABLE (Train Design) and Welch Allyn Halogen Coaxial Diagnostic Set. Both nearly new. Please call 255-6678.

Practice For Sale

KALIHI.– PRACTICE FOR SALE IN KALIHI. Great location. Great potential. Reasonable price. Call Danelia at 671-3238.

Seeking Employment

INTERNIST.– Internist seeks opportunity in INTERNAL MEDICINE / PRIMARY CARE. Any Island. Excellent clinical skills and references. Extensive tropical medicine, critical care and geriatric experience. E-mail: brycemd@hotmail.com

The Weathervane Russell T. Stodd MD

Welcome To The Jungle.
Many refractive surgeons (perhaps some right here in paradise-city) have established "co-management" agreements with optometrists or ophthalmologists whereby the co-managing doctor is paid significantly more than the 80/20 split typically allowed under Medicare global fee rules. Most refractive surgeons assume that the Stark II and anti-kickback laws do not apply since the arrangements are not reimbursed by Medicare or Medicaid. However, if the Dept. of Health and Human Services Office of Inspector General feels that the lucrative referral share produces a stream of cataract or other Medicare referrals to the refractive surgeon, then the over- market fee split may be treated as an illegal kickback and not legitimate co-management. And still another area of vulnerability is the malpractice threat when the co-manager may not be competent regarding possible injuries related to the surgery. Some members of the American Society of Cataract and Refractive Surgery are concerned about the exorbitant kickback fees, but any open discussion about co-management fees could be interpreted as price fixing. In a nearly forgotten medical world, doctors were concerned only with patient care and professionalism.

Delay Is The Deadliest Form Of Denial.
In Britain, Prime Minister Tony Blair's government may fall due to a breakdown in their beloved National Health Service. A 73 year old female patient with throat cancer needed prompt surgery to remove the malignant growth, but the procedure was postponed four times over five weeks due to a lack of beds. By the time space was available the tumor had spread and was no longer operable. The public was outraged as the media highlighted the system's failure, and the inability to cope with the annual outbreak of influenza which stretched the hospitals. The U.K. spends about 8% of its GDP on health care, compared with America's 14% (although many medical expenses in the US are considered social in Britain). Now, Mr. Blair says that an increase in the small but growing private care would solve the NHS's difficulties. Contrarily, across the Atlantic our government is doing its best to destroy our cherished private sector of medicine. Go figure.

The Possession Of Power Inevitably Spoils The Free Use Of Reason.
Cataract surgery is easily the most common operation for Medicare patients, and those wonderful people at HCFA are constantly searching for ways to reduce costs. Suggestions have been made that monitored anesthesia is not necessary for cataract surgery, because the operation has evolved into a very safe and predictable procedure. Not so! A study of over 1000 consecutive cataract operations by Rosenfeld et al., found that patients under 60 required intervention 61% of the time while those older than age 60 needed intervention 36.5% of the cases. The operative risk could not be predicted, but obviously an older population, often with a history of heart, pulmonary, renal, vascular or other systemic condition, is fragile. Intervention varied from physical restraint and respiratory assistance to simple verbal assurance.

Experience Is A Good Teacher, But He Sends Terrific Bills.
Harvard Pilgrim, a nonprofit HMO that consistently has been rated near the top in quality of medical care, was placed under Massachusetts state receivership as a result of spiraling losses and errors in accounting. Rising medical and drug costs plus heavy price competition among HMOs and insurers produced losses. Original figures were about $100 million, but were actually found to be from $150 to $177 million. The losses also had the effect of squelching a $147 million state bond issue that had been scheduled. The state planned to sell the bonds to private investors and use the money to buy five of the HMO's buildings and lease them back.

Quicker And Sicker – 'Em Up! Head 'Em Out!
Bean counters at health care consulting firms HCIA Inc. of Baltimore and William M Mercer, Inc. of New York came up with a stupid, stupid list of "Top 100 Hospitals," by measuring financial performance. The ranked hospitals showed significantly shorter lengths of stay, lower in-hospital costs and lower rates of readmission within 180 days (the patients probably died) for cardiac patients. However, analysts found that there was no significant difference in quality of care compared with un-ranked hospitals. Meanwhile, the "top" hospitals rushed to promote themselves in what is a public relations bonanza for attracting customers and bargaining with managed-care organizations. At the same time, U.S. News and World Report published another well-regarded hospital ranking, scoring patient care exclusively, evaluating mortality rates, available technology, and nurses-to-beds ratio. Johns Hopkins Hospital and Mayo Clinic were among their top hospitals.

It Is Worse Than A Crime. It Is A Blunder.
In Florida, patients who are planning a malpractice suit against a physician must notify the Department of Health of their intention. The DOH wants to make the information publicly available when the complaint is received. Previously, the state only made the complaint public after an investigation found probable cause or after the suit had actually been filed. The Florida Medical Association and Osteopathic Association were unsuccessful in obtaining a temporary injunction. The state attorney general said there was no violation of law, so tough luck, Doc. "The information would unfairly identify physicians who may be threatened with frivolous and unfounded lawsuits," according to their request. Any disgruntled patient can make an unwarranted complaint and the Florida Department of Health will announce it to the media. Lucky you live Hawaii.

Six Months Ago I Could Not Spell Doctor. Now I Are One.
In these days of reduced physician income, HMO manipulations, struggles to confront insurance goliaths, and abiding and often abusive government inference, a stupid display of ostentatious wealth surely doesn't help the doctor's image. In Barrington, a Chicago suburb, a husband and wife doctor couple paid $180,000 cash for a home for their high school student son to park his 1999 Honda in the driveway near the school. Work on the school parking lot had created a shortage of space. Buying a parking place for your high school child's car is not uncommon in Chicago's suburbs, but this episode went beyond the pale. How can physicians expect any sympathy for declining income, and loss of medical control when episodes like this get nationwide publicity?

Excuse For The Millennium – "The Check Is In The E-Mail."
E-mail medicine (cybercare?) is only in embryo, but the virtual house call is going to be part of more practices in the not distant future. A patient can prick the finger, squeeze a drop of blood onto a glucose meter about the size of a floppy disc, hook up the meter to the computer and click it off to the doctor's lab for analysis and medical direction. It is happening today in silicon valley, and such exams take place daily at DiabetesWell.com which treats over 700 patients across the U.S. In addition, many web sites already have shaken up medical care by giving patients access to great amounts of material, some legitimate and a lot of it fanciful. Bearing this information patients are appearing in the doctors' offices armed with questions, challenges and therapeutic expectations.

Deja Moo: The Feeling That You've Heard This Bull Before.
Political correctness has hit the box of Crayolas. Binnie & Smith, Inc., makers of Indian red crayons, is changing the name of the reddish-brown hue after teachers complained that many children (or is it the teacher?) think the color refers to the skin color of Native Americans. Wrong! In fact the name actually refers to a pigment used by fine artists, found in clay in regions of India. The National Congress of American Indians had not complained about the color, however they applauded the increased sensitivity "to images and symbols which have been perceived as offensive to Native Americans." Please give me a break, non-gender, non-racial, non-sexually-oriented, chairperson.

ADDENDA
❖From 1987 to 1996, the number of women smokers of child-bearing age, dropped from 16.3% to 11.8%.
❖Since 1979, eighteen American amateur soccer players have been killed by falling goalposts.
❖46% of U.S. women "wish they could do something about their thighs."
❖Change is inevitable, except from vending machines.
❖It is alleged that sties are caused by watching your dog defecate.
Aloha and keep the faith —rts■

One of a kind.



Unmistakable.

At MIEC, we know what it means to stand out in the crowd. Twenty-five years ago, we started the West's first doctor-owned, not-for-profit malpractice insurance company. The idea quickly caught on, and now there are dozens of "doctor-owned" companies throughout the country.

But there is only one MIEC. Our rate and dividend history is unparalleled. Guess that's why we don't need a large sales or marketing staff. Our track record speaks for itself.

The original is still the best. Call us.

Medical Insurance Exchange of California
6250 Claremont Avenue, Oakland, California 94618
Telephone 800-227-4527 www.miec.com
HAWAII CLAIMS OFFICE: 1360 South Beretania Street, Honolulu, Hawaii 96814

Our 25th Anniversary, 1975–2000

Sponsored by Hawaii Medical Association



Hawaii medical journal
v. 59
no. 3
March 2000
Received on: 04-18-2000
Brown University Library
SCI

HAWAII MEDICAL JOURNAL

1-SIZE
R15
H25x
SCI

April 2000 Volume 59, No. 4 ISSN: 0017-8594



Special Issue on the Third Pacific Vascular Symposium Part I

MIXED ADC 967
Serials Dept
Science Library
Roy L
Fresno University
Fresno CA 93740-0001

You Call That Involvement?

Some plans promise you a voice.
HMSA delivers.

As a nonprofit mutual benefit society,
HMSA looks to leaders from all areas of our community
to help guide our Association. Our volunteer
board of directors is made up of people from the community,
business, labor, government, the clergy and, yes, medicine.
Of our 27 directors, seven are Hawaii practicing physicians.
As members of our board and numerous
advisory committees,
doctors have a say in almost everything we do.

HMSA. Now that's a health plan.

HMSA

Blue Cross
Blue Shield
of Hawaii

Choices for a Healthier Hawaii

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
Vincent S. Aoki MD, Benjamin W. Berg MD, John Breinich MLS, Satoru Izutsu PhD, James Lumeng MD, Douglas G. Massey MD, Myron E. Shirasu MD, Frank L. Tabrah MD, Alfred D. Morris MD

Journal Staff
Managing Editor: Becky Kendro
Editorial Assistant: Drake Chinen

Officers
President: James Lumeng MD
President-Elect: Philip Hellreich MD
Secretary: Gerald McKenna MD
Treasurer: Paul DeMare MD
Past President: Patricia L. Chinn MD

County Presidents
Hawaii: David Camacho MD
Honolulu: Walter K.W. Young MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Patrick Aiu MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 1999 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 116

Guest Editorial
Bo Eklof MD and Bob Kistner MD. 116

Medical School Hotline
Steven E. Seifried PhD 117

Program of the Third Pacific Vascular Symposium 119

Photos from the Third Pacific Vascular Symposium 121

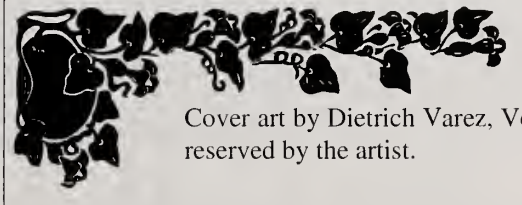
Faculty of the Third Pacific Vascular Symposium 122

Scientific Articles of the Third Pacific Vascular Symposium 124

News and Notes
Henry N. Yokoyama MD 170

Classified Notices 171

Weathervane
Russell T. Stodd MD 174



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

Iolani Barracks

Iolani Barracks was built in 1870 for the Royal Household Guards.

Editorial

Norman Goldstein MD
Editor, Hawaii Medical Journal

Pacific Vascular Symposium on Venous Disease

When Bo Eklof, MD, asked if the Hawaii Medical Journal could publish the proceedings and discussions of a symposium held in November 1999, I told him that, because of the excellent speakers, this symposium would be well received by HMA members and other readers of the Journal.

We have previously published reports of scientific meetings and devoted Special Issues to particular fields of medicine to inform physicians of the latest advancements in many fields of medicine to enhance understanding beyond our own specialties. The added comment to the presentations have always made the more formal papers stimulating.

This issue on the treatment of venous disease will be of interest to all physicians. When I saw the proposed list of more than 40 of the world's leaders in phlebology, I did accept the Proceedings. However, because of the volume of the presentations and discussions, we cannot publish them in a single issue. More will follow.

Thanks to Bo Eklof, MD, and Bob Kistner, MD, co-chairmen of the Symposium, and to the presenters from around the world. These Special Issues will comprise a textbook on vascular disease.

Guest Editorial

Robert L. Kistner MD
Bo Eklof MD, PhD
Co-Chairmen, The Third Pacific Vascular Symposium

The Third Pacific Vascular Symposium on Venous Disease took place at Mauna Lani Bay Hotel on the Big Island of Hawaii on November 2-6, 1999. The faculty included more than 40 of the leaders in phlebology, representing five continents. The general theme was to contrast aggressive treatment of acute and chronic venous disease with a more conservative approach.

The first day featured a workshop on venous interventions with practical demonstrations of percutaneous interventions for acute and chronic venous disease. The second day focused on treatment and outcomes of DVT of the three segments of the leg followed by a session on air travel-related DVT. The third and fourth days were devoted to the controversy on management of venous ulcers. The last day of the symposium featured a workshop on treatment of varicose veins and spider veins with practical demonstrations of duplex guided sclerotherapy, lasers and new surgical developments.

We were excited when Norman Goldstein, the Editor for the Hawaii Medical Journal, warmly embraced the idea to publish the proceedings of this very lively meeting. In this issue the short papers and heated discussions from the second day are presented.

We thank the staff of the Straub Foundation and the editorial office of the journal for their excellent work. Enjoy the information on the latest news on management of DVT as it transpired from the Pearl of Hawaiian hotels surrounded by the Five Mountains in the midst of Hawaiiana.

Robert L. Kistner, MD
Co-Chairman

Bo Eklof, MD, PhD
Co-Chairman



Medical School Hotline

Genetics in the John A. Burns School of Medicine Curriculum: a nationally recognized need and an opportunity for curricular Integration

Steven E. Seifried, PhD
Associate Professor of Physical Biochemistry
Department of Genetics and Molecular Biology

The New Genetics of The Common Disorder

Genetic diseases are not rare. Their impact lies far beyond cystic fibrosis, sickle cell and thallasemia. Hypertension, alcoholism, depression, diabetes, and cancer are now recognized to be, to some extent, genetic diseases. Although we do not yet know all the details, it is clear that genetic background can define predisposition to a number of significant etiologies. Medical genetics is one of the most rapidly advancing areas of medical practice. The knowledge of medical genetics that is necessary for medical practice is likely to be very different in 5 or 10 years than it is now. Every physician who practices in the 21st century will require a basic knowledge of the principles of human genetics and their application to a wide variety of clinical problems.

The Human Genome Project is predicted to be complete by the 50th anniversary of Watson and Crick's Double Helix paper in *Nature*. Thousands of researchers working to apply the derived results will yield rapid advances in genetic medicine. There has been an explosion in the number and membership of professional organizations related to human genetics. New health care professions and career paths have rapidly evolved.

Because of the shear number of common gene-related diseases, and the advent of managed care, there is a general recognition that the General Practitioner will necessarily fill some of the roles of genetic councilor and diagnostician as DNA chips, family genetic history-taking tools, and genotype-specific interventions become common practice.

Recognition of a Need for a Curriculum of The New Genetics

A recent issue of the Association of American Medical Colleges (AAMC) Newsletter[1] quotes "Students must understand that if they want to be a good internist, say, they have to understand genetics. They don't expect to be a good physician without learning about the kidney-well, they can't ignore genetics any more than they can ignore the kidney." The American Medical Association (AMA) has undertaken a significant effort to develop CME courses in genetics. The latest AAMC exit poll reports 44% of new graduates were unsatisfied with the amount of genetics they received in their curriculum. A 1997 study found that almost a third of physicians surveyed could not distinguish an inconclusive result from a negative one in a genetic test for colon cancer. Partly in recognition of these findings, genetics items have recently been added to the US Medical Licensing Examination (USMLE) Content Outline and Genetics sub scores are reported for Part I of the USMLE Board Examination. The AAMC is concerned enough about this issue that it hosted a series of Focus Sessions relating to the development of genetic curricula at its most recent national meeting.

The New Genetics in the JABSOM Curriculum: Building on National Recommendations

"The New Genetics" provides an opportunity to deliver an integrated curriculum, including basic science, clinical science, public health and epidemiology, ethics and cultural issues. This "GPEC" (Genetics, Public Health, Ethics and Cultural) curriculum would go beyond the GEE (Genetics, Epidemiology, and Ethics) curriculum recently rolled out by the University of Vermont with great interest and fanfare. With the recognition of Public Health as unfolding from epidemiology, and the cultural complexity of our Hawaii, there are unique opportunities to develop a "whole" (not "complete") PBL curriculum with the new genetics as a longitudinal binding theme. An attractive attribute of this plan is a mechanism by which faculty of the School of Public Health can become involved in MD Program curriculum design and delivery.

The American Society of Human Genetics has developed a Medical School Core Curriculum[2] to provide guidance to deans and curriculum committees regarding knowledge, skills, and attitudes related to medical genetics that are likely to be needed by all current medical students during their careers as physicians. Their generalized recommendations follow:

Medical genetics is both a basic biomedical science and a clinical specialty; it is insufficient to teach it as either alone. Teaching in medical genetics must span the entire undergraduate medical school curriculum and must continue into the postgraduate years as well.

Medical genetics must be explicitly included in the curriculum. Although some aspects of medical genetics overlap with and may be taught by other disciplines, students are unlikely to learn what they need unless specific learning objectives in medical genetics are established for them. This is especially true of issues that lie at the heart of medical genetics, such as the importance of disease prediction and prevention, the appropriate application of novel scientific discoveries to clinical care, and the nondirective approach to counseling.

A person or committee should be given specific responsibility for the curriculum in medical genetics at each medical school. This responsibility should extend throughout the entire undergraduate curriculum and should include involvement in all courses that contain (or that should contain) material related to medical genetics.

Medical genetics can be taught effectively by a variety of different methods and in various formats. **Problem-based learning is particularly well-suited to medical genetics**, which involves the integration of skills and knowledge from many different fields [emphasis added].

The Association of Professors of Human or Medical Genetics report entitled "Clinical Objectives in Medical Genetics for Undergraduate Medical Students"[3] defines the knowledge, skills and attitudes in genetics that all medical students should achieve during the clinical phase of their education. These objectives complement those of the ASHG Medical School Core Curriculum in Genetics, which covers both basic science and clinical aspects of medical student education. The reader will find many behavioral, populational, cultural, and clinical issues listed in the objectives enumerated by this organization.

The desired outcome of an integrated genetic curriculum at JABSOM is to prepare the student to:

1) practice modern medicine which includes recognizing the role of genetic factors in health and disease. This requires knowledge of the structure, function, and transmission of genes and understanding of interactions both among genes and between genes and the environment.

2) synthesize factual material related to genetic diseases and congenital anomalies and to use this information to formulate an appropriate plan for diagnostic evaluation and patient management. Students will learn to communicate information regarding genetic conditions, clearly, nondirectively, and without personal bias, to people from greatly differing educational, socioeconomic, ethnic, and cultural backgrounds.

3) be sympathetic, nonjudgmental, and nondirective counselors who recognize their own limitations, seek consultation whenever necessary, and become lifelong, self-motivated learners.

References

1. Not Your Father s Genetics Curriculum. http://www.aamc.org/newsroom/reporter/oct99/genetics.htm. AAMC Reporter:9, 1999.
2. Report from the ASHG Information and Education Committee: Medical School Core Curriculum in Genetics. http://www.faseb.org/genetics/ashg/policy/rep-01.htm *Am. J. Hum. Genet. 56:535—537, 1995.*
3. Clinical Objectives in Medical Genetics for Undergraduate Medical Students. http://www.faseb.org/genetics/aphmg/aphmg12.htm *Am J Hum Genet 1995;56:535-537.*



HAWAII POISON CENTER

OAHU: 941-4411

NEIGHBOR ISLANDS TOLL-FREE:

1-800-362-3585

Free Hotline 24 Hours a Day.

POISON CENTER TIPS

- Keep the number of the Hawaii Poison Center on or near your telephone.
- If you suspect a poisoning, do not wait for signs and symptoms to develop. Call the Hawaii Poison Center immediately.
- Always keep Ipecac Syrup in your home. (This is used to make a person vomit in certain types of poisoning.) **Do not use Ipecac Syrup unless advised by the Hawaii Poison Center.**
- Store all medicines, chemicals, and household products out of reach and out of sight, preferably locked up.
- A good rule to teach children is to "always ask first" before eating or drinking anything—don't touch, don't smell, don't taste.

Donate to help us save lives.

Mail checks, payable to:

Hawaii Poison Center

1319 Punahou Street, Honolulu, HI 96826

Air Force Healthcare. Good Pay. Professional Respect.

Why Do You Think We Say "Aim High"?

Experience the best of everything. Best facilities. Best benefits. Outstanding opportunities for travel, 30 days vacation with pay, training and advancement.

For an information packet call

1-800-423-USAF

or visit www.airforce.com.

You'll see why we say, "Aim High."

AIM HIGH

AIR FORCE

HEALTH PROFESSIONS

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA

ACKNOWLEDGEMENTS

Straub Foundation gratefully acknowledges the following companies for their support of the Third Pacific Vascular Symposium on Venous Disease:

MAJOR SUPPORTERS:
Abbott Laboratories
W.L. Gore & Associates, Inc.
Impra, Inc.
Rhone-Poulenc Rorer Pharmaceuticals Inc.
Wyeth-Ayerst Laboratories

SUPPORTERS:
Abbott Critical Care
ACI Medical Inc.
Advanced Technology Laboratories, Inc.
Astra Pharmaceuticals
B. Braun/McGraw
Baxter Healthcare Corporation
Beiersdorf - Jobst, Inc.
Boston Scientific Corporation
Cook
Cordis Endovascular
CryoLife, Inc.
Currie Medical Specialties, Inc.
DuPont Pharmaceuticals
ESC Medical Systems Inc.
Ethicon
GE Medical Systems
Genentech, Inc.
General Surgical Innovations
Guidant Corporation
Hoechst Marion Roussel, Inc.
Huntleigh Health Care
Medi USA
Medi Bayreuth/Medi UK
Novartis Pharmaceuticals Corporation
Nycomed Amersham
Ortho-McNeil Pharmaceutical
Otsuka America Pharmaceutical, Inc.
Pharmacia & Upjohn
Possis Medical, Inc.
Sigvaris Inc.
STD Pharmaceutical
Venosan North America Inc.
VenPro Corporation
VNUS Medical Technologies, Inc.

STRAUB FOUNDATION
presents

Heart ATTACK and Brain ATTACK in the New Millennium

A Symposium on Prevention and Treatment

Hilton Hawaiian Village, Tapa Ballroom

Professional Meeting
May 25 and May 26, 2000

Free Public Meeting
May 27, 2000

Supported by HMSA Foundation and The Queen's Medical Center

To register for both meetings, contact:
STRAUB FOUNDATION
1100 Ward Avenue, Suite 1045
Honolulu, HI 96814
Telephone: (808) 524-6755
Fax: (808) 531-0123
www.straub-foundation.org

Program

Third Pacific Vascular Symposium On Venous Disease November 2-6, 1999

Mauna Lani Bay Hotel & Bungalows • Kohala Coast, Big Island of Hawaii, USA

WEDNESDAY, NOVEMBER 3, 1999 (MAUNA LANI BALLROOM)

7:00 a.m. CONTINENTAL BREAKFAST/EXHIBITS OPEN

SEGMENTAL ALTERNATIVES TO TREATMENT OF DEEP VEIN THROMBOSIS

Moderator: Anthony J. Comerota, MD, FACS
Panel: Andrew H. Cragg, MD
Russell D. Hull, MBBS, MSc
Robert L. Kistner, MD
Robert B. Rutherford, MD, FACS, FRCS
D. Eugene Strandness, Jr., MD, DMed(Hon)
Thomas W. Wakefield, MD

7:30 a.m. INTRODUCTION

7:45 a.m. THE SCIENTIFIC EVIDENCE FOR EARLY REMOVAL OF THE THROMBUS TO IMPROVE OUTCOME
Thomas W. Wakefield, MD

8:00 a.m. CAN VALVES BE PRESERVED?
Robert L. Kistner, MD

8:15 a.m. EARLY REMOVAL OF THE THROMBUS DOES NOT IMPROVE OUTCOME COMPARED WITH CURRENT ANTICOAGULATION TREATMENT
Russell D. Hull, MBBS, MSc

8:30 a.m. WHAT'S THE OUTCOME OF TREATMENT FOR DVT IN THREE SEGMENTS OF THE LEG: CALF, FEMOROPOPLITEAL AND ILIOFEMORAL
Russell D. Hull, MBBS, MSc

9:00 a.m. CALF DVT
1. Robert L. Kistner, MD - "Surveillance" Treatment
2. Gregory L. Moneta, MD - Anticoagulants For All

10:00 a.m. BREAK/EXHIBITS OPEN

10:30 a.m. FEMOROPOPLITEAL DVT
1. Russell D. Hull, MBBS, MSc - Anticoagulation
2. Patricia E. Thorpe, MD - Thrombolysis

11:15 a.m. ILIOFEMORAL DVT
1. Hugo Partsch, MD - Ambulatory Treatment
2. Andrew H. Cragg, MD - Catheter-Directed Thrombolysis
3. Andrew H. Cragg, MD - Venoplasty and Stenting of Iliac Vein Obstruction
4. Bo Eklof, MD, PhD - Selective Thrombectomy
5. Anthony J. Comerota, MD, FACS - Algorithm and Future Research

1:00 p.m. LUNCH (CANOEHOUSE)

2:00 p.m. AIR TRAVEL - RELATED ACUTE THROMBOEMBOLISM

Moderator: Kevin G. Burnand, MD, MBBS, FRCS, MS
Panel: Joseph A. Caprini, MD, MS, FACS, RVT
Bo Eklof, MD, PhD
Reginald S.A. Lord, MD
Hugo Partsch, MD

Hawaii Views - Bo Eklof, MD, PhD
London Views - Kevin G. Burnand, MBBS, FRCS, MS
Vienna Views - Hugo Partsch, MD
Sydney Views - Reginald S.A. Lord, MD
Chicago Views - Joseph A. Caprini, MD, MS, FACS, RVT

FREE PAPERS:

1. Traveller's Venous Thromboembolism
Kurosh Parsi, MD

2. Risk Factors For Venous Thromboembolism Following Prolonged Air Travel: A "Prospective" Study
Berndt Arfvidsson, MD, PhD

3:30 - 4:00 p.m. BREAK/EXHIBITS OPEN

3. Deep Vein Thrombosis in Airline Passengers - The Incidence of Deep Vein Thrombosis and the Efficacy of Elastic Compression Stockings
John Scurr, FRCS

4. Upper Extremity Venous Thromboembolism Associated with Air Travel
Theodore Teruya, MD

GUIDELINES FOR PREVENTION - PANEL DISCUSSION

5:30 p.m. SCIENTIFIC SESSION ENDS

Program

THURSDAY, NOVEMBER 4, 1999 (MAUNA LANI BALLROOM)

7:00 a.m. CONTINENTAL BREAKFAST/EXHIBITS OPEN

VENOUS ULCER
PART ONE - THE CONTROVERSIES IN TREATMENT

7:30 a.m. Moderator: Ralph G. DePalma, MD, FACS
Panel: Kevin G. Burnand, MBBS, FRCS, MS
Bo Eklof, MD, PhD
Ermenegildo A. Enrici, MD

"How my method of treatment changes the pathophysiology to heal the ulcer and prevent recurrence?"

1. Philip D. Coleridge Smith, DM, MA, FRCS - Drugs Are the Ultimate Answer
2. Gregory L. Moneta, MD - Wrapping
3. Peter Gloviczki, MD - Sepsing
4. John J. Bergan, MD, FACS, Hon.FRCS(Eng) - Stripping
5. Michel Perrin, MD - Repairing Primary Reflux
6. Seshadri Raju, MD - Repairing Secondary Incompetence

VENOUS ULCER
PART TWO - ANY CONTROVERSIES IN DIAGNOSIS?

Moderator: Seshadri Raju, MD
Panel: Philip D. Coleridge Smith, DM, MA, FRCS
Kenneth A. Myers, MS, FACS, FRCS
Frank Padberg, Jr., MD, FACS
D. Eugene Strandness, Jr., MD, DMed(Hon)
David S. Sumner, MD

9:00 a.m. LEVEL 1 - THE OFFICE
1. Kenneth A. Myers, MS, FACS, FRACS - Clinical Evaluation
2. David S. Sumner, MD - The Hand-Held Doppler
3. Andre Cornu-Thenard, MD - The French C in CEAP
4. Frank Padberg, Jr., MD, FACS - Sensory Impairment

10:30 a.m. BREAK/EXHIBITS OPEN

11:00 a.m. LEVEL 2 - THE VASCULAR LAB
1. Jan Holm, MD - Reliability of Clinical Diagnosis
2. D. Eugene Strandness, Jr., MD, DMed(Hon) - Duplex in Reflux
3. Paul R. Cordts, LTC, MC - Plethysmography in Reflux
4. Peter N. Neglen, MD, PhD - Evaluation of Obstruction

12:30 p.m. LEVEL 3 - INVASIVE PROCEDURES
1. Seshadri Raju, MD - Descending Venogram
2. Kevin G. Burnand, MBBS, FRCS, MS - The St. Thomas Way

1:30 p.m. SCIENTIFIC SESSION ENDS

FRIDAY, NOVEMBER 5, 1999 (MAUNA LANI BALLROOM)

7:00 a.m. CONTINENTAL BREAKFAST/EXHIBITS OPEN

VENOUS ULCER
PART THREE - MANAGEMENT OF THE DECOMPENSATED LEG

7:30 a.m. Moderator: Thomas F. O'Donnell, Jr., MD
Panel: Michael C. Dalsing, MD
Ralph G. DePalma, MD, FACS
Peter Gloviczki, MD
Robert L. Kistner, MD
Michel Perrin, MD
Seshadri Raju, MD

7:45 a.m. VENOUS ULCER AND CEAP
Nicos Labropoulos, PhD, DIC, RVT

The management will be demonstrated by presentation of cases that will illustrate increasing severity of chronic venous disease. Each case will be handled by a group of specialists that will propose diagnostic measures and treatment. Their suggestions will be discussed by the panel and opened up to the audience for wider participation.

8:00 a.m. CASE OF SUPERFICIAL INCOMPETENCE

A 65-year old lady from the Big Island with 5 children developed large varicose veins during her pregnancies. She has had recurrent large ulcerations on her right leg for 30 years and within the last 6 years has developed a painful, circumferential ulceration on the right leg.

Specialists: Gianni Belcaro, MD, PhD (Save the Saphenous Vein)
G. Mark Malouf, MBBS, FRACS, FRC (High Ligation and Stripping)
J. Leonel Villavicencio, MD, FACS (Sclerotherapy)

9:00 a.m. CASE OF PERFORATOR INCOMPETENCE

65-year old woman with large recurrent venous ulcerations on left lower leg. Past history is significant for left GSV ligation and stripping, 1979 and left popliteal and superficial femoral vein DVT, 1989. Laboratory evaluation now shows the following: no significant deep venous obstruction and mild reflux (VFI 3.2 ml/sec) by APG; Duplex scan shows mild recanalization changes of superficial femoral and popliteal veins, no deep reflux and 3 large incompetent perforated veins in the medial aspect of the lower leg.

Specialists: Ralph G. DePalma, MD, FACS (SEPS)
Ermenegildo A. Enrici, MD (Open Perforator Ligation)
Jean-Jerome Guex, MD (Ultra-Sound Guided Sclerotherapy)

10:00 a.m. BREAK/EXHIBITS OPEN

10:30 a.m. CASE OF PRIMARY DEEP VENOUS REFLUX

A 36-year old gentleman from Western Samoa has had recurrent venous ulcerations of both legs that first began when he was 15 years old. He has not been able to work for the past 4 years because of painful, large ulcerations of the right leg.

Program

VENOUS ULCER
PART FOUR - QUO VADIS?

3:00 p.m. RESULT OF QUESTIONNAIRE REGARDING DEEP VENOUS RECONSTRUCTION
Tomohiro Ogawa, MD, PhD

3:10 p.m. VALVULOPLASTY AND PRIMARY VENOUS IN SUFFICIENCY
Fedor Lurie, MD, PhD

Moderator:	Robert L. Kistner, MD	Thomas F. O'Donnell, Jr., MD
Panel:	Michael C. Dalsing, MD	Michel Perrin, MD
	Ralph G. DePalma, MD, FACS	Seshadri Raju, MD
	Peter Gloviczki, MD	Robert B. Rutherford, MD, FACS, FRCS
	Kenneth A. Myers, MS, FACS,FRCS	D. Eugene Strandness, Jr., MD, DMed(Hon)

5:00 p.m. SCIENTIFIC SESSION ENDS

Photos



S. Kalani Brady, MD MPH opens the first day of the meeting with a Hawaiian Ceremony.



Drs. Bo Eklof and Bob Kistner, co-chairmen, welcome everyone at the reception.

Scenes from the Third Pacific Vascular Symposium



Some of the distinquished faculty members take a moment to pose outside the Mauna Lani Ballroom.

Faculty

Peter W. Balkin, MD
Chief of Radiology, Straub Clinic & Hospital, Honolulu, Hawaii, USA

Gianni Belcaro, MD, PhD
Researcher, Cardiovascular Institute, Chieti University, Pescara, Italy
Director Angiology & Vascular Surgery, Pierangeli Clinic, Pescara, Italy

John J. Bergan, MD, FACS, Hon, FRCS(Eng)
Professor of Surgery, University of California Medical School, San Diego, California, USA

Kevin G. Burnand, MBBS, FRCS, MS
Professor of Vascular Surgery, Department of Surgery, St. Thomas' Hospital, London, United Kingdom

Joseph A. Caprini, MD, MS, FACS, RVT
Louis W. Biegler Chair of Surgery, Northwestern University Medical School, Chicago, Illinois, USA
Professor of Bioengineering, Northwestern University, Evanston, Illinois, USA
Director of Surgical Research, Evanston Northwestern Healthcare, Evanston, Illinois, USA

Philip D. Coleridge Smith, DM, MA, FRCS
Senior Lecturer, Department of Surgery, UCL Medical School, London, United Kingdom

Anthony J. Comerota, MD, FACS
Professor of Surgery, Temple University School of Medicine, Philadelphia, Pennsylvania, USA
Chief of Vascular Surgery; Director, Center for Vascular Diseases, Temple University Hospital, Philadelphia, Pennsylvania, USA

Paul R. Cordts, LTC, MC
Clinical Assistant Professor of Surgery, USUHS, USA
Clinical Assistant Professor of Surgery, University of Hawaii, John A. Burns School of Medicine, Honolulu, Hawaii, USA
Vascular Surgeon, Tripler Army Medical Center, Honolulu, Hawaii, USA

Andre Cornu-Thenard, MD
Director of Phlebology Education, Saint Antoine Hospital, Paris, France

Andrew H. Cragg, MD
Clinical Partner, Minneapolis Vascular Institute, Minneapolis, Minnesota, USA
Clinical Professor of Radiology, University of Minnesota, Minneapolis, Minnesota, USA
Interventional Radiologist, Fairview-University Medical Center, Minneapolis, Minnesota, USA

Michael C. Dalsing, MD
Director of Vascular Surgery, Indiana University Medical School, Indianapolis, Indiana, USA

Ralph G. DePalma, MD, FACS
Professor of Surgery, Vice Chair Surgery, Associate Dean, University of Nevada School of Medicine, Reno, Nevada, USA
Chief of Surgery, Reno VAMC, Reno, Nevada, USA

Bo Eklof, MD, PhD
Vascular Surgeon, Straub Clinic & Hospital, Honolulu, Hawaii, USA
Clinical Professor of Surgery, University of Hawaii, John A. Burns School of Medicine, Honolulu, Hawaii, USA
Medical Director, Straub Foundation, Honolulu, Hawaii, USA

Ermenegildo A. Enrici, MD
Chairman, Phleb/Lymph Department, Argentine Catholic University, Buenos Aires, Argentina
Honorary Consultant, Central Military Hospital, Buenos Aires, Argentina
Associate Academic Member, Argentine Academy of Surgeons, Buenos Aires, Argentina

Peter Gloviczki, MD
Vice-Chair, Division of Vascular Surgery, Mayo Clinic, Rochester, Minnesota, USA
Professor of Surgery, Mayo Medical School, Rochester, Minnesota, USA

Gabriel Goren, MD
Director, Vein Disorders Center, Encino, CA, USA

J. Jerome Guex, MD
Vice-President, French Society of Phlebology, Nice, France
Treasurer, International Union of Phlebology, Nice, France

Jan Holm, MD
Associate Professor of Surgery, Department of Surgery, Sahlgrenska University Hospital, Goteborg, Sweden

Shunichi Hoshino, MD, PhD
Professor and Chairman, Department of Cardiovascular Surgery, Fukushima Medical University School of Medicine, Fukushima, Japan

Russell D. Hull, MBBS, MSc
Director, Thrombosis Research Unit, Professor of Medicine, University of Calgary, Calgary, Alberta, Canada

Curtis B. Kamida, MD
Radiologist, Straub Clinic & Hospital, Honolulu, Hawaii, USA
Clinical Associate Professor of Radiology, University of Hawaii, John A. Burns School of Medicine, Honolulu, Hawaii, USA

Robert L. Kistner, MD
Vascular Surgeon, Straub Clinic & Hospital, Honolulu, Hawaii,

USA
Clinical Professor of Surgery, University of Hawaii, John A. Burns School of Medicine, Honolulu, Hawaii, USA
President, Straub Foundation, Honolulu, Hawaii, USA

Nicos Labropoulos, PhD, DIC, RVT
Assistant Professor of Surgery, Loyola University Medical Center, Maywood, Illinois, USA
Director of Research, Vascular Diagnostics Ltd., Park Ridge, Illinois, USA
Vascular Consultant, West Suburban Hospital, Oak Park, Illinois, USA

Reginald S.A. Lord, MD
Professor, Department of Surgery, University of Sydney, Sydney, Australia

Fedor Lurie, MD, PhD
Department of Anesthesiology, University of California Davis Medical Center, Sacramento, California, USA

G. Mark Malouf, MBBS, FRACS, FRCS
Surgeon in Venous Disease, Westmead Hospital, Sydney, Australia
President, Australian and New Zealand Society of Phlebology, Australia

Elna M. Masuda, MD
Vascular Surgeon, Straub Clinic & Hospital, Honolulu, Hawaii, USA
Clinical Assistant Professor of Surgery, University of Hawaii, John A. Burns School of Medicine, Honolulu, Hawaii, USA

Mark Mewissen, MD
Associate Professor, Department of Radiology, Medical College of Wisconsin, Milwaukee, Wisconsin, USA

Gregory L. Moneta, MD
Professor of Surgery, Oregon Health Sciences University, Portland, Oregon, USA

Kenneth A. Myers, MS, FACS, FRACS
Professor, Monash Medical Centre and Epworth Hospital, Melbourne, Australia

Peter Neglen, MD, PhD
Vascular Surgeon, River Oaks Hospital, Jackson, Mississippi, USA

Thomas F. O'Donnell, Jr., MD
President & CEO, New England Medical Center, Boston, Massachusetts, USA
Andrews Professor of Surgery, Tufts University, Boston, Massachusetts, USA

Tomohiro Ogawa, MD, PhD
Cardiovascular Surgeon, Fukushima Medical University School of Medicine, Fukushima, Japan
Visiting Colleague, Department of Surgery, University of Hawaii, John A. Burns School of Medicine, Honolulu, Hawaii, USA
Research Fellow, Straub Foundation, Honolulu, Hawaii, USA

Frank Padberg, Jr., MD, FACS
Professor of Surgery, UMDNJ – New Jersey Medical School, Newark, New Jersey, USA

Hugo Partsch, MD
Professor of Dermatology, University of Vienna, Austria
Head of Dermatological Department, Wilhelminen-Hospital, Vienna, Austria
President, Union Internationale de Phlebologic, Vienna, Austria

Michel Perrin, MD
Associate Professor, University of Grenoble, Grenoble, France

John R. Pfeifer, MD, FACS
Professor of Surgery, University of Michigan School of Medicine, Ann Arbor, Michigan, USA
Director, Division of Venous Disease, University of Michigan School of Medicine, Ann Arbor, Michigan, USA

Seshadri Raju, MD
Emeritus Professor and Honorary Surgeon, University of Mississippi Medical Center, Jackson, Mississippi, USA

Robert B. Rutherford, MD, FACS, FRCS
Professor Emeritus, Department of Surgery, University of Colorado, Silverthorne, Colorado, USA

D. Eugene Strandness, Jr., MD, DMed (Hon)
Professor, University of Washington, Seattle, Washington, USA

David S. Sumner, MD
Distinguished Professor of Surgery, Emeritus; Southern Illinois University School of Medicine, Springfield, Illinois, USA
President, American Venous Forum, USA

Patricia E. Thorpe, MD
Associate Professor of Radiology/Surgery, Creighton University Medical Center, Omaha, Nebraska, USA

J. Leonel Villavicencio, MD, FACS
Professor of Surgery, Department of Surgery, Uniformed Services University of the Health Sciences, Bethesda, Maryland, USA
Senior Consultant, Department of Surgery and Director of Venous and Lymphatic Teaching Clinics, Walter Reed Army Medical Center, Washington, DC, USA and Naval Medical Center, Bethesda, Maryland, USA

Thomas W. Wakefield, MD
Professor of Surgery, Section of Vascular Surgery, University of Michigan Medical Center, Ann Arbor, Michigan, USA

Robert A. Weiss, MD
Assistant Professor, Department of Dermatology, Johns Hopkins University School of Medicine, Baltimore, Maryland, USA

THE SCIENTIFIC EVIDENCE FOR EARLY REMOVAL OF THE THROMBUS TO IMPROVE OUTCOME

Thomas W. Wakefield, MD
University of Michigan Medical Center
Ann Arbor, Michigan, USA

The pathophysiologic basis for early clot removal stems from the inflammatory process that accompanies venous thrombosis. Steward initially proposed four stages for this inflammatory response.[1] First, thrombus forms in the veins, with inflammatory cells and platelets becoming activated within this initial thrombus. Second, further neutrophil and platelet activation occurs, generating procoagulant and inflammatory mediators. Third, coagulation occurs on activated platelet phospholipid surfaces, increasing the speed of thrombin and fibrin generation. Finally, leukocytes and platelets layer on top of existing clot, further increasing the thrombotic/inflammatory interplay. Inflammation ultimately leads to the amplification of thrombosis, driven by both tissue factor expression on monocytes and by the exposure of vein wall collagen after endothelial denudation, likely due to cathepsin G release from activated neutrophils.

The above results in leukocyte extravasation into the vein wall, migrating from both the adventitial and luminal surfaces. Using a rodent model of stasis-induced venous thrombosis by IVC ligation, we have demonstrated an active vein wall pro-inflammatory response characterized by cellular trafficking, involving early neutrophil extravasation[2] followed by monocyte/macrophage infiltration, occurring as early as 6 hours after thrombus formation begins.[3] At 6 hours, an increase in all leukocyte types (except for monocytes) in the vein wall occurs, and by day 2, neutrophils are the predominant cells in the thrombosed vein wall. Although inflammatory cells can be noted at the thrombus/vein wall interface, more leukocytes are recognized in the media and adventitia of the vein wall than at the 6-hour time point. By day 6, neutrophil counts in the vein wall fall to near baseline, while monocyte counts significantly rise and the thrombus/vein wall interface becomes less distinct. FACS analysis and MPO analysis support and extend these observations.

Neutrophils, initially adherent to the endothelium, lead to endothelial disruption, exposing the collagen-rich basement membrane. This leads to further thrombus propagation, followed by leukocyte transendothelial migration and further vein injury. Factors important to leukocyte extravasation include tumor necrosis factor (TNF), the earliest up-regulated selectin (P-selectin), and the adhesion receptor intercellular adhesion molecule-I (ICAM-1).[3,4] In a study evaluating P-selectin and TNF inhibition and their ability to reduce venous thrombosis-induced inflammation, the lowest vein wall neutrophil and total inflammatory count early after thrombosis, and the lowest neutrophil and monocyte count later was found in a group given antibodies to TNF plus P-selectin. Other cytokines/chemokines that are also up-regulated in the vein wall include epithelial neutrophil-activating protein-78 (ENA-78), KC, macrophage inflammatory protein-2 (MIP-2), JE/monocyte chemotactic protein-1 (JE/MCP-1), macrophage inflammatory protein 1a (MIP-1a), and interleukin-6 (IL-6). In the rat, cytokine elevations are seen only under conditions of venous thrombosis.[3] Levels of ENA-78, TNFα, IL-6, and JE/MCP-1 rise over a 6-day period, while MIP-1α peaks on day 3 after thrombus formation. Additionally, rats passively immunized with neutralizing antibodies to cytokines and adhesion molecules have demonstrated a decrease in neutrophil extravasation into the vein wall with anti-TNF, and a decrease in monocyte/macrophage extravasation with anti-ICAM-1 and anti-TNF.

Although the above factors are pro-inflammatory, we have also noted that the initiation, maintenance, and eventual resolution of phlebitis is dependent on both pro-inflammatory and anti-inflammatory cytokines. Interleukin 10 (IL-10), a naturally occurring anti-inflammatory cytokine produced by inflammatory cells, mast cells, and epithelial cells, has been found elevated in the vein wall after venous thrombosis. In the rodent stasis model of IVC thrombosis, neutralization of endogenous IL-10 increased inflammation, while rIL-10 supplementation decreased inflammation in a time and dose-related fashion.[5] Recombinant IL-10 administered at 2.5μg was found to significantly decrease vein wall total inflammatory cells, neutrophils, and monocytes. At a high dose of 40μg, IL-10 produced a paradoxical pro-inflammatory response. In a time-dependent fashion, rIL-10 given systemically at the most effective anti-inflammatory dose, 2.5μg at the time of thrombus induction, was most effective in decreasing inflammation.

Two additional measures of vein wall injury produced by inflammation have been investigated, vein wall permeability to Evans blue given 3 hours prior to vein removal and magnetic resonance venography (MRV) using gadolinium. Gadolinium (Gd) is a non-toxic heavy metal chelate that extravasates into areas of inflammation, as opposed to generalized edema. Gd chelates are para-magnetic heavy metals that decrease the T1 relaxation times of inflammatory foci, resulting in enhancement in areas of inflammation. Enhancement was measured and quantitated in mm^2. There is essentially no enhancement without thrombosis ($1.83\pm0.40mm^2$). In thrombosed IVCs associated with maximal inflammation (IL-10 at 40mg), Gd-enhancement was measured at $32.7\pm6.2mm^2$, while in thrombosed IVCs in rats administered rIL-10 at the anti-inflammatory dose of 2.5mg, enhancement was measured at only $14.7\pm1.5mm^2$, $p<0.05$.[6]

Inflammation augments thrombosis. Since we had previously noted a correlation between inflammation and venous thrombosis and IL-10 inhibits inflammation, we determined the ability of IL-10 to decrease clot formation. A significant ($p<0.05$) 18% decrease in gross thrombus weight with rIL-10 administration compared to control was found. We also noted a trend with an 8% decrease in tissue factor production with rIL-10, using flow cytometry. To further examine the mechanism of IL-10's anti-inflammatory and anti-thrombotic effects, the rodent IVC segment was transfected with an adenovirus-CMV promoter-viral IL-10 (vIL-10) construct to locally express this product. Controls included saline vehicle and the promoter (CMV or RSV)-ß galactosidase (ßgal) constructs. Successful transfection, confirmed by RT-PCR for the vIL-10 cDNA and suggested by positive X-gal staining in promoter-ßgal control rats, resulted in a significant decrease in both total leukocyte count and neutrophil count as well as perithrombotic Gd enhancement ($p<0.05$). Interestingly, no significant difference in thrombus weight was found, perhaps a reflection of the balance between anti-IL-10 and the pro-inflammatory nature of transfection. Since IL-10 is known to decrease inflammation in part by decreasing cell adhesion molecule expression,[7] we also investigated the expression

of the cell adhesion molecules P- and E-selectin and ICAM-1 by immunohistochemical techniques and cell homogenate ELISA.[8] In the vIL-10 transfected rats, a reduction in the expression of all of these molecules as compared with the control promoter and saline groups was found.

Studies in the rat have been supplemented by evaluation of IVC thrombosis in a primate model. Baboons pretreated with two different antibodies to P-selectin or saline exhibited significantly less thrombus than control animals along with a decrease in inflammation.[9] Using a P- and E-selectin peptide antagonist approach, a similar but even more striking response has been found, with thrombosis much more frequent in IVC segments from control animals as opposed to IVC segments from animals pretreated with the selectin antagonist.[10] These primate studies support the notion that initial leukocyte adhesion is important for thrombus formation and its amplification.

Does the same inflammatory response noted in the animal studies also occur in clinical deep venous thrombosis (DVT)? We have developed a technique to evaluate inflammation in the vein wall noninvasively, using gadolinium (Gd) administered during magnetic resonance venography (MRV). The same enhancement noted in rats and primates has been seen clinically, and the presence or absence of Gd-enhancement defined a DVT less than or greater than 14 days old.[11] Additionally, we have noted that clinical patient vein walls demonstrate an acute increase in inflammatory cells during superficial thrombophlebitis and positive immunohistochemical staining for IL-8 and other chemokines. This suggests that thrombotic inflammation is similar in multiple species, including man.

As inflammation augments thrombosis and is likely involved in vein wall damage leading to the syndrome of chronic venous insufficiency, removal of the thrombus or blockade of the detrimental inflammatory response appears indicated, and, thus, the scientific basis for early clot removal is established.

References

1. Stewart GJ. Neutrophils and deep venous thrombosis, *Haemostasis*. 1993;23:127-140.
2. Downing LJ, Strieter RM, Kadell AM. Neutrophils are the initial cell type identified in deep venous thrombosis induced vein wall inflammation, *ASAIO J*. 1996;42: M677-M682.
3. Wakefield TW, Strieter RM, Wilke CA. Venous thrombosis-associated inflammation and attenuation with neutralizing antibodies to cytokines and adhesion molecules, *Arterioscle Thromb. Vasc. Biol.* 1995;15:258-268.
4. Wakefield TW, Strieter RM, Downing LJ. P-selectin and TNF inhibition reduces venous thrombosis inflammation, *J Surg Res*. 1996;64:26-31.
5. Downing LJ, Strieter RM, Kadell AM. IL-10 regulates thrombus-induced vein wall inflammation and thrombosis, *J Immunology*. 1998; 161:1471-1476.
6. Londy FJ, Kadell AM, Wrobleski SK. Detection of perivenous inflammation in a rat model of venous thrombosis using MRV, *J Invest Surg*. In press.
7. Mulligan MS, Jones ML, Vaporciyan AA. Protective effects of IL-4 and IL-10 against immune complex induced lung injury, *J Immunology*. 1993;151:5666-5674.
8. Henke PK, Debrunye L, Strieter RM. Interleukin-10 overexpression decreases inflammation and cell adhesion molecule expression in venous thrombosis, *Surg Forum*. In press.
9. Downing LJ, Wakefield TW, Strieter RM. Anti-P-selectin anti body decreases inflammation and thrombus formation in venous thrombosis, *J Vasc Surg*. 1997; 25:816-828.
10. Wakefield TW, Strieter RM, Schaub R. Venous thrombosis prophylaxis by inflammatory inhibition without anticoagulation, *J Vasc Surg*. (Sub mitted).
11. Froehlich JB, Prince MR, Greenfield LJ. "Bull's-eye" sign on gadolinium-enhanced MRV deter mines thrombus presence and age, *J Vasc Surg*. 1997;26:809-816.

DISCUSSION

DR. CRAGG: That was a great talk. I had a question, perhaps naive, about the precursor of the thrombotic event, and I wondered if you had any experience. Is there anybody working on possible viral mediation for this inflammatory precursor? In other words, could someone catch a cold in their vein valve and lead to a thrombotic event? And second, it also related to the precursor. Is denudation a precursor there and could you just discuss the whole events surrounding the beginning of the thrombotic process?

DR. WAKEFIELD: Virchow's Triad states that you have to have three factors in order to have thrombosis, I think probably if you have two you will get a thrombotic response. For example, in our model where we are producing pure stasis, with the stasis you get vein wall dilatation, and I'm sure with that you end up losing endothelial cell contact, with exposure of subendothelial collagen, and then you get a little bit of thrombin formation. Once you get a little bit of thrombin, that thrombin can really rev up the whole system because thrombin can stimulate cytokine production, cause up-regulation of P-selectin and E-selectin, cause up-regulation of the stable adhesion molecules that then eventually lead to a further inflammatory cell extravasation, and can up-regulate platelets and activate them. So I think all it takes is a little bit of something to stimulate the system to really rev it up, and probably you just need two of the three components. You don't have to be hypercoagulable. You just have to have stasis and injury, I think, in order to initiate the process.

DR. GLOVICZKI: I just had two clinical questions. First, is the inflammatory response in superficial veins different than deep veins? The second, if deep vein thrombosis is then deep vein thrombophlebitis or not?

DR. WAKEFIELD: I think it's the same response. I think it's just that in the deep veins you don't see it. In the superficial veins you see it. So people have recognized it for years. Obviously I haven't had the opportunity to look at a deep vein in a patient in the same way I have looked at superficial veins, but I can tell you that the noninvasive Gadolinium response with magnetic resonance venography is exactly the same that you see in animals as you see in patients. The inflammatory response will last for about ten days to two weeks, and then the Gadolinium extravasation diminishes in the same time course that you see it decline in the primate experiments. So I think it's the same process.

DR. COMEROTA: It appears that some patients can have thrombosis of the greater saphenous system. You can see the clotted vein with very little inflammatory response. In this situation you can strip that vein easily, and the process is over and done with, whereas others have a marked inflammatory response, which has been well characterized. Those with thrombosis without inflammation represent the minority, and those with an inflammatory response the majority. When we've operated on deep vein thrombosis, frequently there is not that edematous inflammation around the deep veins when they're thrombosed. So while I think that there is an inflammatory response, I don't think it's the same in everyone, at least from a clinical perspective.

DR. WAKEFIELD: I think there are gradations for individual patients because not everybody, for example, will resolve their thrombus at the same rate, and you see some patients who at two or three weeks by noninvasive imaging will look like they still have a subacute thrombosis and others will look like they have more of a chronic thrombosis.

DR. HULL: You've identified very succinctly the importance of the inflammation process with leukocytes. What evidence is there, and I'm asking since I don't know, with regards to unfractionated heparin versus low molecular weight heparin? Is one superior to the

other?

DR. WAKEFIELD: I can answer this question with one rat study that we have done, and we have others ongoing. When we looked at standard unfractionated heparin compared to Fragmin, which is the low molecular weight heparin that we looked at, Fragmin at low doses, nonanticoagulant doses, was the best compared to even higher doses of Fragmin or compared to unfractionated heparin for eliminating neutrophil extravasation and for a functional test that we used to evaluate vein wall integrity. So it appeared that Fragmin at nonanticoagulant doses that do not prolong the anti-factor Xa level is markedly anti-inflammatory. I wonder from this, although it's a big leap, whether or not some of the improvement in mortality rate that has been seen with low molecular weight heparin compared to standard heparin in protocols for venous thrombosis treatment has something to do with the anti-inflammatory effect of low molecular weight heparin compared to standard unfractionated heparin.

DR. BURNAND: I enjoyed your presentation very much indeed. Obviously I thought the baboon model bore greater relationship to human thrombus than the other model. What we've noticed when you ligate everything and you don't have flow going out of the vena cava is that you get a clot that's totally different from organized thrombus. You don't get the sort of nice streaming that you showed, and I was interested to hear that you say that. How do you explain the differences that we've found? And a very simple question, what happens when you deplete the animal of leukocytes? What does that do to the thrombus?

DR. WAKEFIELD: I can tell you that we've used an antibody against monocytes, and we have seen that the thrombus is twice as large as it is when you have not inhibited monocytes. So this is very much in line with what your lab has been showing, that monocytes appear very important for the subsequent resolution of the thrombus over time. We have not performed experiments involving neutrophil depletion.

DR. GONZAGA: Excellent, Dr. Wakefield. Because of the pro-inflammatory and subsequent inflammatory reaction involved in the pathophysiology of venous thrombus formation, do oral anti-inflammatory agents e.g., aspirin, have a role in DVT prevention or recurrence?

DR. WAKEFIELD: It's been taught that anti-platelet agents are not very useful for preventing thrombosis, but I think there is a role of platelets in deep venous thrombosis. I do not think that certainly you're going to get the same anti-thrombotic effect with an anti-platelet agent for venous thrombosis prevention, for example, and that's been well shown, but I do not think platelets are as innocuous a player in DVT as people have thought in the past. As our P-selectin work demonstrates and other work that has been performed using P-selectin receptor antagonists, you can actually show an improvement in various animal injury models. For example, in ischemia reperfusion injury in the liver, in animals where inflammatory cell localization is independent of P-selectin, interventions against P-selectin are still hepatoprotective. This suggests a platelet-mediated effect of the P-selectin inhibition. So I think the platelets are important. As far as should we be using anti-inflammatories in patients who have deep venous thrombosis, I think the answer is probably yes. I don't have any randomized control data, though, to answer that question. Certainly, heparin or low-molecular-weight heparin demonstrate some anti-inflammatory effect.

CAN VALVES BE PRESERVED?

Robert L. Kistner, MD
Straub Clinic & Hospital
Honolulu, Hawaii, USA

The question of preservation of venous valves is critical in the lower limb below the common femoral vein (CFV) level and is of no demonstrated importance in the veins from the common femoral through the iliac vein and inferior vena cava. The literature on both major and minor maladies due to venous insufficiency has demonstrated the critical importance of both primary and secondary reflux in the thigh and calf, revealing this to be the dominant pathophysiologic problem. Furthermore, reflux in any of the three systems of the limb veins, superficial, perforator, and deep, may be sufficient to cause severe venous problems. In the proximal veins from the CFV through the iliac veins and the inferior vena cava, valves have no recognized physiologic role, but obstruction in these veins may cause severe complications unless it is very well collateralized. The worst physiologic combination in the lower limb veins occurs when proximal obstruction occurs together with distal reflux.

In primary disease there is only reflux, but in post-thrombotic secondary disease both obstruction and reflux are present. Prospective studies demonstrate the great propensity for the initially obstructed veins of DVT to recanalize and to subsequently develop reflux. These studies are ongoing, but it is clear that at least half of the thrombosed limbs develop reflux in the involved segments, and many develop reflux in segments not originally known to have been thrombosed. The natural history data of DVT is accumulating through duplex scan studies which record reflux very well, but it remains possible that significant amounts of more subtle obstructive changes persist in these veins undetected by the ultrasound studies.

The natural history studies also show that up to half of the originally thrombosed veins become recanalized and recover competence by duplex scan criteria. The question of whether this competence is due to preserved normally functioning valves, or whether another mechanism for retaining competence exists, requires an answer. Can retained intraluminal thrombotic masses, or synechiae and strands, produce enough resistance to retrograde flow to simulate competence in these segments? If such masses were present, wouldn't they be obvious on insonation of the distal veins? If the competence is truly due to recovery of normal function by the valves in the originally thrombosed vein, the challenge is to learn what factors cause these particular valves to recover while valves in other segments become scarred and destroyed.

It has been shown experimentally and proven clinically that early thrombolysis of intraluminal thrombosis can yield patent veins that have competent valves, proven by both duplex scan and descending venography, and substantiated by clinical status of the patient. This established fact raises questions such as how long can a thrombus be present and still yield a competent valve after thrombolysis, and are there local or other factors that influence this result other than time?

The ability of thrombectomy to result in a competent valve where

thrombus was present prior to the operation has been studied in Sweden with post-thrombectomy descending venograms which show valvular competence to have been preserved in the thigh veins in the late follow-up at five years. Whether there is a critical time during which surgical thrombectomy can produce this result, or whether there are other factors that are operative, remains unknown.

There are classic studies of the origin of venous thrombosis which show thrombus beginning deep in the valve sinus suggesting that the valve area is highly thrombogenic, probably due to flow factors. In contrast, other studies indicate the valve cusp itself is highly resistant to thrombosis and is prone to remain free of attached thrombus when the adjacent endothelium becomes involved with the thrombus. This suggests the motion of the valve cusp may resist attachment of the thrombus to its endothelium, a finding which could work to preserve valve function.

In primary disease, the valves actually shrink and gradually atrophy over time, perhaps to the point of disappearance. It appears from longitudinal studies that primary reflux disease is a progressive phenomenon during life, but the factors that govern its progress are unknown. There is the possibility that proximal valve reflux contributes to this progression through a process of retrograde dilation of the vein, raising the potential that correction of proximal reflux could forestall the progressive course of distal reflux. Some evidence for this is seen in reports of regression of saphenous dilation after repair of the uppermost valve near the sapheno-femoral junction. In the deep veins, the persistence of good to excellent clinical results for 10-20 years after proximal valve repair also supports this possibility.

The fact that the venous valve can be preserved is established. The fact that venous reflux is the most important physiologic problem in clinical chronic venous disease is also established. The challenge for the future is to identify the elements that cause progressive reflux in both primary and secondary disease and to learn to modify those factors in a favorable direction. Basic studies that lead to better understanding of the venous endothelium and the degenerative changes in the venous wall, in addition to improvements in our knowledge of the effect of thrombosis upon the venous surface, are the most likely areas that will produce progress.

DISCUSSION

DR. COMEROTA: That's a very compelling argument regarding many facets of venous disease. I would like to ask Gene Strandness to address one issue that snuck in here. I don't know if Gene picked up or not. There was one patient that was treated, Gene, in whom the duplex showed competent valves, but the descending phlebogram showed that they were not. I just wonder, which one do you believe.

DR. KISTNER: Let me interpret that for a minute. The segment was competent. The individual valves in the superficial femoral vein showed reflux until we got to the competent popliteal valve.

DR. COMEROTA: We have on a couple of occasions demonstrated differences between descending phlebograms and what we found in the vascular laboratory. When we looked at physiologic studies, they essentially agreed with the duplex. We now have a dichotomy of what we see on the descending phlebogram and what we saw with our physiologic studies and the duplex. Gene, do yon have any thoughts on that?

DR. STRANDNESS: I think Dr. Kistner explained it. With duplex you're looking at reflux by segment. You're not looking at any individual valve. So yon could have a valve, for example, in the superficial femoral vein that might be incompetent and one below it would be competent. So by duplex that segment would appear to be competent.

DR. KISTNER: Yes, I think that's the finding, Gene. Let me ask you, suppose you had permanent thrombosis or blockage of that distal segment and you have an absence of competent valves above that. Will that appear competent? I suggest that could appear competent by duplex even when the valves are actually destroyed. What do you say about that?

DR. STRANDNESS: I'm not sure about that. I'd have to think about it. It's a good qnestion. I don't really have an answer without thinking about it.

DR. HASANIYA: How do you explain that when the whole segment is involved with deep vein thrombosis that certain valves will continne to be competent while other valves will lose competency though they are all subject to the same pathology?

DR. KISTNER: I can't explain it. I think that's something we need to investigate. The thing that I was fascinated to find out was whether a truly demonstrated thrombosis was lysed by treatment could result in a fully functional valve? I am convinced from this case and a few others -- we've studied three cases this way -- that the valve can truly be preserved. I look at the continued mobility of the valve cusp. Even though there's thrombus around the wall, maybe that process allows several days to get rid of the thrombus before the leaflets become fixed.

DR. RUTHERFORD: There's a point that you touched upon that I think deserves emphasis. In regard to the ability of early clot removal to preserve valves, the focus generally has been on preserving valve function in the involved segment, which is obviously a greater challenge. The delay between onset and treatment is critical, but clearly clot removal has to be done promptly to preserve valves. On the other hand, we tend to overlook the valves downstream, in uninvolved segments. If the clot is not removed early and you have persistent obstruction and high distal pressure, distal valves undergo changes with dilation and ultimately, under the high ambulatory pressnre below the obstruction, can become secondarily incompetent. I think there's considerable evidence on this from Gene Strandness' lab and their serial studies of DVT with duplex scanning which shows that valves <u>below</u> the involved segment progressively become incompetent with time in up to a third of cases. Therefore, I feel that early clot removal may play an important role in also preserving the competence of distal valves, which may be very important functionally.

DR. KISTNER: Yes. I think if we can get the duplex to the point where we can study the valve cusps in situ, we may be able to study a lot in a practical way. Right now the standard is venography.

DR. BURNAND: I was going to take up two points, one, the point that you brought up about a single valve being important because one thing that perhaps you and Dr. Strandness, who's always teaching me things, can explain to me is what segmental reflux below a competent valve means, because I've thought that this was a sort of epiphenomenon that wasn't real because providing you've got one competent valve proximally, like you said, that's probably all you actually need. So is segmental incompetence real or is it just something that we see because if it is true reflux, it has to presumably

reflux through an incompetent perforator coming out of the side of that segment or otherwise it's just "yoyoing" up and down in the isolated segment. The second thing that you brought up was the business about ligating the femoral vein. I caution hard against that. Norman Browse for a spell went through a period of ligating femoral veins and also Vijay Kakkar in London went through a period of ligating femoral veins, and we've got some truly appalling limbs that were left over as a result of that.

DR. COMEROTA: Which femoral vein was it?

DR. BURNAND: The superficial femoral vein just below the profunda, exactly where Bob said he was ligating it. There is something strange because we have people resecting the femoral vein to use as a conduit and they don't seem to get a problem. So there is obviously something different that's going on under different circumstances, and I wonder whether you could tell us what that is.

DR. KISTNER: I have a thought that if all three systems, all axial systems, have become incompetent or thrombosed and all collaterals are incompetent, then ligation of the superficial femoral vein makes no sense. But if there is a competent popliteal-profunda system and/or a retained saphenous system with functional valves, then our studies up to 13 years showed excellent long term results which might have swelling, but not much further in the way of post-thrombotic changes, and no ulcers.

DR. BURNAND: Is the popliteal vein the most important bit of that segment and how can you prevent the thrombus under certain circumstances extending back into the popliteal vein?

DR. KISTNER: Well, I think that one valve in each axial segment is necessary and that may be the popliteal vein, but it may be a valve higher than the popliteal vein. On the segmental reflux, I think that's why it's so key to study our patients thoroughly with the CEAP classification that includes segmental anatomy and segmental reflux and obstruction, and then make the correlations with the clinical course. I don't think we can answer exactly which segmental reflux is going to lead to sequelae at this point.

DR. LABROPOULOS: I did a prospective study on deep calf vein thrombosis. So far we have looked at 87 limbs and have a year follow-up. Less than a half of the patients received anticoagulation. The rest of the patients were followed-up with duplex scanning. Only 24 percent of patients developed reflux. Obviously valve function can be preserved in the calf veins regardless of treatment. The femoropopliteal segment is very clear from Dr. Strandness' studies, that only 69 percent of patients that had DVT developed reflux by the end of the first year. A lot of patients did not develop reflux in thrombosed segments. Therefore, valve function can be preserved. Looking at the saphenous vein as one axial pathway, it's very hard to believe that one valve in the saphenous system could preserve the function of the vein. In our study (J Vasc Surg 1997 November issue), we found that in most patients reflux started at below knee segments of the greater saphenous vein. Therefore, if you have a competent valve or competent valves above it, this may not preserve the whole saphenous system. Just to comment on the segmental reflux and the perforating veins. I don't believe that you need to have perforator vein reflux to have reflux in a superficial vein. If you're talking about the greater saphenous vein, for example, there are many tributaries joining the vein. If you have a saphenous segment that's refluxing, you have inflow of blood from the tributaries.

DR. KISTNER: I think I agree with everything you said.

DR. LABROPOULOS: I don't think that a single valve could preserve an axial pathway in the greater saphenous system, because most often reflux starts at the below knee segment.

DR. COMEROTA: I think we agree with you, and you have some very fine data to support that.

CALF VEIN DVT: SURVEILLANCE AND TREATMENT

Elna M. Masuda, MD
Straub Clinic & Hospital
Honolulu, Hawaii, USA

Robert L. Kistner, MD
Straub Clinic & Hospital
Honolulu, Hawaii, USA

The danger of clot propagation, pulmonary embolus (PE), and post-thrombotic syndrome is substantial when thrombus involves the iliac or femoral veins, and treatment generally consists of anticoagulation for 3 to 6 months. Less clear are the clinical implications of calf vein deep venous thrombosis (DVT) involving the veins below the knee. Isolated calf vein DVT is estimated to be found in 5% to 33% of all DVT diagnosed.[1,2] Some have reported significant risk for propagation up to 28% including extension into adjacent crural veins.[3] However, when this is recalculated to include only the significant extension into popliteal or femoral veins, the incidence decreases to 11%. When surveillance duplex scanning alone is used without anticoagulation, Solis reported a proximal propagation rate of 8%.[4]

The direct relationship of isolated calf DVT and pulmonary embolus is controversial. In most series where calf DVT and PE were shown to have a high association, cases were selected by identifying those who presented with PE, then were subsequently scanned and found to have DVT. The question remains in these reports as to whether a larger, more proximal clot in the femoral or popliteal segment could have embolized before discovery of the calf clot. Obviously, prospective collection of data is critical to accurately study the relationship between PE and calf DVT. Serial duplex scanning of calf DVT and subsequent follow-up to examine the incidence of PE is required.

Post-thrombotic syndrome following calf DVT is believed to occur in 3% to 37% of patients.[5,6] In one series with follow-up extending to 13 years, there were no ulcers reported.[5] Others claim a high incidence of severe sequelae and physiologic abnormalities in 19%.[7]

Between 1990 and 1995, we examined 58 limbs in 54 patients who were found to have isolated calf DVT by duplex scanning and reported our results.[8] The study consisted of two parts: the first phase with retrospective review of calf DVT and the second phase with prospective acquisition of clinical, imaging, and physiologic data. The first phase was used to examine the rate of clot propagation and pulmonary embolism within 6 months of the DVT, and the second phase consisted of follow-up examination, color-flow duplex scanning, and air plethysmography. Of the 58 limbs with calf DVT, 89%

were symptomatic and 11% were asymptomatic. Since anticoagulation therapy was not controlled, 28 received anticoagulation and 26 did not.

The most common site for isolated calf DVT was the peroneal vein (76%). The second most common location involved the posterior tibial vein (36%). Interestingly, there were no cases of anterior tibial vein involvement.

Rate of clot propagation in entire group was 2 of 49 cases (4%). These cases of propagation occurred within 2 weeks of the diagnosis of DVT. They both occurred in the group who did not receive anticoagulation, and produced an incidence of 8% clot propagation in the untreated group. There were no cases of clinical PE during the surveillance period of calf DVT.

Lysis of thrombi or recanalization occurred in majority by 3 months. At 3 years follow-up, approximately half of all cases had some complaint of swelling, but this was not objectively measurable, and ulceration rare. Interestingly, one third of the group had reflux in venous segments not involved with calf DVT.

In summary, isolated calf vein DVT can be safely managed by duplex scan surveillance without anticoagulation, with a risk for clot propagation in 8%. It is unlikely that isolated calf clot, if properly watched, will produce significant pulmonary emboli or the post-thrombotic syndrome. Duplex scan surveillance should be extended to at least 2 weeks, and preferably 4 weeks to adequately screen for clot extension.

References:

1.Markel A, Manzo RA, Bergelin RO, Strandness DE. Pattern and distribution of thrombi in acute venous thrombosis, *Arch Surg*. 1992;127: 305-309.

2.Mattos MA, Melendres G, Sumner DS, Hood DB, Barkmeier LD, Hodgson KJ, et al. Prevalence and distribution of calf vein thrombosis in patients with symptomatic deep venous thrombosis: A color-flow duplex study, *J Vasc Surg*. 1996; 24:738-744.

3.Lohr JM, James KV, Deshmukh RM, Hasselfield KA. Calf vein thrombi are not a benign finding, *Am J Surg*. 1995:170:86-90.

4.Solis MM, Ranval TV, Nix ML, Eidt JF, Nelson CL, Ferris EJ, et al. Is anticoagulation indicated for asymptomatic post-operative calf vein thrombosis? *J Vasc Surg*. 1992: 16:414-419.

5.Eichlisberger R, Frauchiger B, Widmer MT, Widmer LD, Jager K. Spatfolgen der tiefen Venen thrombose: ein 13-Jahres Follow-up von 223 Patienten, *Vasa*. 1994: 23:234-243.

6.Schulman S, Granqvist S, Juhlin-Dannfelt A, Lockner D. Long-term sequelae of calf vein thrombosis treated with heparin or low-dose streptokinase, *Acta Medica Scandinavica*. 1986;219:349-357.

7.Kakkar VV, Lawrence D. Hemodynamic and clinical assessment after therapy for acute deep vein thrombosis, a prospective study, *Am J Surg*. 1985;150(4A):54-63.

8.Masuda EM, Kessler DK, Kistner RL, Eklof B, Sato DT. The natural history of calf vein thrombosis: Lysis of thrombi and development of reflux, *J Vasc Surg*. 1998;28:67-74.

CALF VEIN THROMBOSIS: ANTICOAGULATION FOR ALL?

Gregory L. Moneta, MD
Oregon Health Sciences University
Portland, Oregon, USA

The clinical significance of DVT limited to calf veins is controversial. Although acute DVT can occur anywhere in the deep venous system of the lower extremity, it is well known the majority originate in the infrapopliteal veins or in muscular sinuses. The thrombotic process then subsequently extends into more proximal veins. This is supported by the observation that significant numbers of patients with proximal DVT have coexisting calf vein thrombi. As many as 32% of patients initially diagnosed with calf vein thrombosis show evidence of propagation into proximal veins on subsequent venous duplex studies. The use of anticoagulation, therefore, in patients of calf vein thrombosis may be indicated for any of the following reasons:

1. An adverse natural history with regard to progression to proximal deep vein thrombosis.

2. A risk of pulmonary embolism.

3. The possibility of preventing late abnormal venous hemodynamics associated with isolated calf vein thrombosis.

Pulmonary emboli in patients with DVT apparently limited to the calf has been noted. Moreno-Cabral, et al, found a 33% incidence of clinically "silent" pulmonary emboli by pulmonary arteriography or serial lung scans in patients with calf venous thrombosis. Similarly, Browse and Lea-Thomas also report non-lethal pulmonary emboli in patients with calf vein thrombosis only and concluded that the source of emboli in about 25% of patients with pulmonary emboli was DVT limited to the infrapopliteal deep venous system. Two necropsy studies have reported fatal pulmonary emboli arising from calf vein thrombosis.

In 1997, we reported 105 patients with isolated calf vein thrombosis and various symptoms. Twenty-six percent of these patients had only respiratory symptoms, nine of which (35%) had pulmonary emboli and two died. Seventy-nine patients had only lower extremity complaints and five later developed respiratory symptoms. All five of these patients had pulmonary emboli and none had progression of calf vein thrombosis on repeat duplex scanning. Examination of risk factors revealed that age, gender, prior DVT/PE, obesity, pregnancy, medication, malignancy, smoking, recent surgery or trauma all failed to predict pulmonary emboli. Therefore, it is clear that patients with isolated calf vein thrombosis who do have associated respiratory symptoms have a high prevalence of pulmonary emboli.

Follow-up of patients in our clinic with isolated calf vein thrombosis has revealed a significant incidence of late appearing abnormal venous hemodynamics. Thirty-seven patients who had an isolated calf vein thrombosis documented by duplex scanning between 1989 and 1994 were reexamined. The mean follow-up was 3.4 years after the diagnosis of isolated calf vein thrombosis in 39 extremities. The control group of 17 subjects was also examined with venous hemodynamics studies. In the patients with isolated calf vein thrombosis at follow-up, venous recovery time was abnormal in 23% of the extremities with the isolated calf vein thrombosis and in 9% of extremities without isolated calf vein thrombosis. None of the extremities in the control group had an abnormal venous recovery time ($p<0.05$). Duplex valve closure times were abnormal at one or more venous segments in 26% of extremities diagnosed with isolated calf vein thrombosis and in only 6% of control extremities

($p<0.05$). Follow-up clinical examinations in patients with isolated calf vein thrombosis revealed 35% with reticular veins and 26% with varicose veins and 5.4% with edema and 2.7% with pigmentation and ulcer. It is unclear whether these abnormal hemodynamic sequelae of calf vein thrombosis could have been avoided with the use of anticoagulations.

In summary, anticoagulations for isolated calf vein thrombosis makes sense from several perspectives. It may limit the propagation into the deep venous system. There is a real incidence of pulmonary emboli with calf vein thrombosis and it is possible that anticoagulation may limit abnormal venous hemodynamics that appear late in patients with isolated calf vein thrombosis.

THE ROLE OF FLOW-DIRECTED THROMBOLYTIC THERAPY IN THE TREATMENT OF LOWER EXTREMITY THROMBOSIS: EVALUATING AND TREATING THE ENTIRE LIMB

Patricia E. Thorpe, MD
Creighton University Medical Center
Omaha, Nebraska, USA

PURPOSE

Deep veins in the calf, particularly those converging at the popliteal level, provide important pathways for flow into the femoral system. Thrombosed tibio-popliteal segments, despite patent axial veins can cause acute symptoms and valvular damage related to subsequent chronic venous insufficiency. Often associated with iliofemoral occlusions, unresolved distal venous thrombus can compromise flow, even when proximal vein patency is restored with catheter-directed thrombolysis. Used alone, or in combination with catheter technique, flow-directed therapy promotes purposeful delivery of thrombolytic agents into affected deep veins. When the path of least resistance is the superficial system, intermittent tourniquet compression of the saphenous vein can optimize distal flow in patients undergoing thrombolysis of axial vein thrombosis. Use of this technique can significantly improve deep venous flow to assist large vein patency and reduce venous hypertension.

MATERIALS AND METHODS

Patients presenting with lower extremity DVT, referred for thrombolysis, were evaluated with ascending venography and duplex. Baseline clinical assessment included leg measurements, CEAP classification and hemo-dynamic testing with PPG or APG. Upon determination of sites of deep venous obstruction, the patient was treated with endovascular therapy including one or more of the following; catheter and/or flow-directed lysis, venoplasty and stent(s). Patients with normal iliofemoral segments received flow-directed urokinase or t-PA, whereas patients with distal and proximal thrombosis received simultaneous catheter and flow-directed therapy. Lysis was continued until complete lysis of acute thrombus was achieved and/or acceptable improvement in venous flow was observed venographically. Systemic heparin was used during the procedure. Post-lysis patients were maintained on warfarin and followed with interval duplex, and clinical evaluation

RESULTS

Between March 1989 and August 1999, 116 patients (55M, 61F) received thrombolytic therapy for lower extremity deep venous occlusion. Among the 130 treated limbs (35R, 95L), 73(56%) had an acute clinical presentation, but 54(40%) of this group had evidence of acute thrombus superimposed upon chronic changes. Almost half, 44%(57/130) presented with chronic clinical history and phlebographic changes. The mean age was 49.3 yrs (range 12-90). Flow-directed lysis was given to 35%(42) whereas 88 limbs and 11 IVC were treated with concomitant flow and catheter- directed lytic therapy. Adjunctive balloon dilatation and self-expanding metallic stents were used in 79%(50/63) of left limbs, and 64%(16/25) of right limbs. Mortality <30 days was 2(1.7%). Survival, with mean follow-up of 36 mo (range 6 mo-11 years) is 92%. Primary clinical improvement, at three years, in the flow-directed group is 76%(32/42) and 83%(73/88) in the combined group. Complications included: bleeding requiring transfusion (4), MI (1), pulmonary edema (4), site infection (2), hematuria (5), SDH (1). Recurrent DVT occurred in 10.3%(12/130), and one patient had a PE after abdominal surgery. Symptomatic fibrointimal hyperplasia, in stents, occurred in 8(6%) patients.

CONCLUSIONS

An important pattern of DVT, presenting to an endovascular service, is characterized by a relatively young population of productive individuals experiencing the signs and symptoms of acute multi-segmental deep vein thrombosis. The phlebographic pattern, however, reveals a preponderance of patients with acute thrombus superimposed on chronic venous changes, (left>right). Endovascular therapy is an effective and safe approach to restoring a favorable flow pattern, in affected limbs, despite the duration of clinical history. Flow-directed thrombolysis is an effective technique for increasing flow in a limb with hemodynamically significant tibio-popliteal thrombosis.

HEPARIN AND LOW-MOLECULAR WEIGHT HEPARIN THERAPY FOR VENOUS THROMBOEMBOLISM — WILL UNFRACTIONATED HEPARIN SURVIVE?
The Impact of Improved Antithrombotic Therapy!

Russell D. Hull, MBBS, MSc
University of Calgary
Calgary, Alberta, Canada

Background

Recent methodological improvements in clinical trials and the use of accurate objective testing for the detection of venous thromboembolism have made possible a series of randomized trials to evaluate various treatments for venous thromboembolism. The results of these trials have resolved many of the uncertainties confronted by a clinician in selecting an appropriate course of anticoagulant therapy. These trials have shown that both the intensity of initial heparin treatment and long-term anticoagulant therapy must be sufficient to

prevent unacceptable recurrence rates of venous thromboembolism. Patients with proximal deep vein thrombosis who receive inadequate anticoagulant therapy have a risk of clinically-evident, objectively documented recurrent venous thromboembolism approaching 20% to 25%. The need for therapy with heparin and the importance of monitoring blood levels of the effect of heparin have been established. The importance of achieving adequate heparinization was suggested by a nonrandomized trial in 1972, and randomized trials in the 1980s have confirmed this finding. Furthermore, randomized trials have demonstrated the importance of achieving adequate heparinization early in the course of therapy.

Unfractionated intravenous heparin has provided an effective therapy for more than half a century, but the need to monitor therapy and establish therapeutic levels is a fundamental problem. It is evident that validated heparin protocols are more successful in establishing adequate heparinization than intuitive ordering by the clinician. Even with the best of care using a heparin protocol, however, some patients treated with intravenous heparin will receive subtherapy. In this context, subtherapy reflects a practical limitation of the use of unfractionated heparin, rather than a poor standard of care. Furthermore, it is recognized that the practical difficulties associated with heparin administration are compounded by the substantive practical difficulties of standardizing APTT testing and the therapeutic range.

Our findings emphasize the confounding effect that initial heparin treatment can have on long-term outcome. In future long-term therapy trials, it is imperative that the initial therapy is of adequate intensity and duration; failure to administer adequate initial treatment may lead to a poor outcome that is falsely attributed to the long-term therapy under evaluation.

A randomized, double-blind trial was conducted comparing the safety and efficacy of intravenous heparin combined with oral anticoagulant versus oral anticoagulant alone in the initial treatment of proximal vein thrombosis. The trial was terminated early because of an unacceptably high incidence of symptomatic extension or recurrence of venous thromboembolism during follow-up in the treatment group of patients receiving only oral anticoagulant. Therefore, it was determined that heparin in addition with oral anticoagulants is required in the initial treatment of patients with proximal vein thrombosis.

Therapy with low-molecular weight heparin, which does not require monitoring and dose finding, is the likely practical solution to these dilemmas. Based on the experience of difficulties achieving adequate therapy with subcutaneous, unfractionated heparin dosing, we administered a low-molecular weight heparin formulation in a single daily dose, rather than splitting the treatment into 2 equal doses. The initial intensity of therapy was thereby maximized. Therapy with low-molecular weight heparin proved to be better than therapy with unfractionated heparin.

Specific Issues

1. Unfractionated heparin has been used extensively in the treatment of venous thromboembolism. Recently, various low-molecular weight heparins have been evaluated against unfractionated heparin for treatment in both the hospital and outpatient setting. In a number of countries, the low-molecular weight heparins have replaced unfractionated heparin for the treatment of venous thrombosis. This is because of both the difficulties presented by unfractionated heparin treatment and the demonstrated safety and effectiveness of low-molecular weight heparin therapy.

2. The anticoagulant response to a standard dose of unfractionated heparin varies widely among patients. Furthermore, heparin is poorly absorbed from a subcutaneous site, especially at lower doses. Unless a prescriptive heparin nomogram is used, many patients receive inadequate heparin in the initial 24-48 hours of treatment. Inadequate therapy has been shown to increase the incidence of venous thromboembolism during follow-up.

3. The low-molecular weight heparins are different compounds with distinct pharmacologic properties, and because different regimens have been used in clinical trials, it is inappropriate to make clinical recommendations based on meta-analyses for comparing the effects of low-molecular weight heparin with placebo, unfractionated heparin, or other active agents.

4. In the treatment of established venous thromboembolism, low-molecular weight heparin given by subcutaneous injection has a number of advantages over continuous intravenous unfractionated heparin. It can be given by once- or twice-daily subcutaneous injection, and the antithrombotic response to low-molecular weight heparin is highly correlated with body weight, permitting administration of a fixed dose without laboratory monitoring.

5. A cost-effectiveness analysis indicated that low-molecular weight heparin was cost-effective when compared with continuous intravenous heparin, because monitoring was not necessary and there were fewer complications requiring rehospitalization and treatment. These findings were verified by a sensitivity analysis. It was estimated that 37% of patients on low-molecular weight heparin could have been discharged on day 2, which would have further increased the cost-effectiveness of the low-molecular weight heparin.

6. Evidence is accumulating that low-molecular weight heparin can be used safely for the treatment of acute, sub-massive pulmonary embolism as well. A recent study reported that initial therapy of subcutaneous LMWH is as safe and effective as unfractionated intravenous heparin in acute pulmonary embolism patients. Studies are currently underway to assess the effectiveness and safety of treatment with low-molecular weight heparin for three months compared with standard heparin followed by warfarin therapy.

7. The antithrombotic treatment of segmental venous thrombosis (i.e., calf, femoropopliteal, and iliofemoral) does not differ for either intensity or duration of therapy using either unfractionated heparin or low-molecular weight heparin therapy. The exception to this general therapeutic statement is the patient with calf vein thrombosis who is at high-risk of bleeding. Serial leg testing to detect proximal extension of thrombosis (which occurs in 20-30% of these patients) is an effective strategy. In this context, serial duplex ultrasonography limits anticoagulant therapy to those patients at high risk of pulmonary embolism due to proximal extension; the remaining patients with isolated calf vein thrombosis are at low risk of pulmonary embolism.

8. Thrombolytic therapy for deep vein thrombosis remains highly controversial because of a lack of level A clinical outcome data. Initial antithrombotic therapy data with heparin may have been inadequate given the historical time frame of the thrombolysis studies, and concerns about the risk of bleeding with adjunctive thrombolysis.

9. The clinical deployment of low-molecular weight heparin therapy, which may for certain nations be associated with less bleeding, mandates that clinical investigators reevaluate thrombolysis for adjunctive treatment of deep vein thrombosis immediately prior to low-molecular weight heparin therapy in definitive level A studies.

DISCUSSION

DR. COMEROTA: I think I'd like to limit the discussion on calf DVT to the next mini-symposium. However, Russell, can you summarize for us your conclusion as to what's the outcome of the treatment for DVT in the three segments? I'm not sure I got that from your talk.

DR. HULL: You didn't because I didn't say it. I thought we'd draw it out in the question session.

DR. COMEROTA: Is there a difference in treatment in femoropopliteal versus iliofemoral? We will address the calf DVT next.

DR. HULL: Segmenting thrombosis into iliac deep vein thrombosis, popliteal femoral deep vein thrombosis and calf deep vein thrombosis, is artificial and clinically unhelpful. In Canada and Europe, the majority of patients are treated with low molecular weight heparin and sent home. Before low molecular weight heparin the patients were not sent home because they might deteriorate. Data for low molecular weight heparin in the treatment of proximal deep vein thrombosis or calf deep vein thrombosis shows at least equivalence or superiority, depending on the context versus warfarin. Low molecular weight heparin has been routinely used in Canada for about three years although patients at very high risk of bleeding still receive intravenous heparin, which can be reversed quickly. In numerous countries, unfractionated heparin treatment has been replaced by low molecular weight heparins for the treatment of venous thrombosis. This is both because of the demonstrated safety and effectiveness of low molecular weight heparin therapy and because of the difficulties presented by unfractionated heparin. Subcutaneous low molecular weight heparin has a number of advantages over continuous intravenous unfractionated heparin. It can be self-administered by once or twice daily subcutaneous injection, and the antithrombotic response to low molecular weight heparin is highly correlated with body weight, which permits administration of a fixed dose without need for laboratory monitoring. With more experience, our confidence in low molecular weight heparin is gradually increasing.

DR. COMEROTA: So all DVT is the same and differentiation into venous segments is artificial and unhelpful? Is that your conclusion?

DR. HULL: If you're dealing with antithrombotic therapy. If you're sticking a catheter in for lysis, there are obvious issues of the mechanics of doing that.

DR. COMEROTA: I was attempting to get your opinion regarding the segmental distribution of acute DVT.

DR. HULL: And I said there was no Level A data for lysis yet, but I sure hope we get it.

DR. STRANDNESS: I have a couple questions for you. One that really concerns me most of all is the European attitude towards the detection of DVT. The use of ultrasound only involves looking at two veins, the common femoral and the popliteal. Interestingly, the prevalence of calf vein DVT is in the range of 12 percent. What is your view about the "stop and pop" technique versus doing a complete limb examination. This is very important if we're ever going to deal with the issue of calf vein thrombosis? If you don't look, you won't find it.

DR. HULL: There's good Level A data that's being ignored. So I think your point is particularly poignant because the Europeans just decided they didn't want to look in the calf. That was a decision that they made, and most North American centers that are routine diagnostic imaging centers use the European approach for reasons that it's very cost effective. The technician doesn't have to fuss around in the calf. That's a tragedy because the Oklahoma data shows that if you fuss around in the calf -- and I'm being a little facetious but that's the European view -- you do something very important. You improve the initial detection rate and you decrease the requirements for serial testing to one ultrasound. Now, that's a very important observation. This is Level A. It's in annals. It's recent because the reality is almost nobody does serial testing at all. So one of the tragedies of ultrasound at the moment is we're doing one test and we know we're having patients on lots of aggregate data, yet most diagnostic imaging departments don't realize that one test is not enough. If we went to the Oklahoma approach and just did the one test, we'd be catching more patients. As you pointed out, Gene, and we'd be doing less harm, but the beauty of the Oklahoma approach is you only need one extra test which people probably would do. So it's not two or three. So the serial noninvasive testing issue is a very thorny one, and most people don't comply and we are harming patients.

DR. COMEROTA: To follow up on that comment by Gene, we have over 3,000 noninvasive studies comparing the common femoral vein and popliteal vein compression versus a complete examination. This will be published in the Annals of Vascular Surgery in the first two months of 2000. We found approximately four percent of proximal DVT would have been missed because they were isolated to the superficial femoral vein, obviously all calf DVT would have been missed. Overall, we would have missed 37 percent of all patients with DVT if we used only the common femoral and popliteal vein compression.

DR. RUTHERFORD: I have a comment and a question. Three years ago at this meeting you presented similar data based on the same outcome criteria of pulmonary embolism, death, recurrent DVT and bleeding. At that time I and others pointed out the importance of the other outcome evaluations, specifically those reflecting the post-phlebitic syndrome. You admitted their importance and said this aspect was to be included in future and ongoing studies. So I'm a little disappointed not to hear anything on post-thrombotic sequelae today, although maybe you're going to give us some Level I evidence on that later in the day. Hopefully you will present that because that's one of the things I expected to get out of this meeting. My question is: are there cost effectiveness studies that showed that the added benefits, which we'll concede exist for a low molecular weight heparin, justifies the additional drug costs? You didn't mention them yet, but I'm sure you must have some data on this. Do the savings from ambulatory care outweigh drug costs?

DR. PARTSCH: Also coming to post-thrombotic syndrome, you have mentioned several times that the key issue would be recurrent DVT. As far as I know, there is one randomized controlled study showing that compression stockings are able to reduce the fre-

quency of post-thrombotic syndrome after proximal DVT, but there are no such data concerning the effect of long-term anticoagulation. I wonder how it is possible that in all large series on long-term anticoagulation the authors just looked at recurrent DVT but nobody looked at post-thrombotic syndrome?

DR. COMEROTA: Hugo, would it be incorrect to assume that if you avoided recurrent DVT that you would lessen the risk of a post-thrombotic event in that patient?

DR. PARTSCH: No, it would not. We know from studies, for instance, from Prandoni that recurrent DVT is really the key issue, but we do not have studies showing that long-term anticoagulation is able to decrease the post-thrombotic syndrome. There is one study from Braudjes and co-workers which was able to show this for compression stockings alone (Lancet 1997).

DR. HULL: Graduated pressure support stockings with an ankle pressure of 30 to 40 mmHg are issued routinely in Canada to all patients with acute deep vein thrombosis. There is good evidence that graduated pressure support both controls and prevents the evolution of the post-phlebitic syndrome.

DR. LORD: Several years ago, I asked a similar question. You started your talk then saying that unfractionated heparin was inferior to low molecular weight heparin, but in discussion you conceded then there was one category, namely the high risk surgical patient, for example, aortic surgery or something like that, in whom you wished to give anticoagulation but in whom you may need to reverse this quickly and need a little control. I was just wondering what the current position is. Is that still the case for IV heparin with protocol for the high-risk postoperative surgical patient?

DR. HULL: Yes. We've been using low molecular weight heparin routinely in Canada for about three years, and we're gradually eroding that principle because of the potential for a decreased risk of bleeding, but that caveat still remains pretty globally true because of the reversal issues for the other part of the consultant team that's involved in the patient. So we're still honoring the very high-risk patient who we may reverse quickly in giving them IV heparin. Yet the paradox is I've showed you some proved safety data, and that safety data may actually be quite real. So our confidence in using low molecular weight heparin is gradually increasing as we get more experience. The experience in Canada now is broad but basically we haven't hit the wall with an unreversal of all patients who died from bleeding with low molecular weight heparin. So that fear is progressively diminishing.

DR. LORD: In the patient I'm referring to, then, what should the ordinary doctor like ourselves --

DR. HULL: We've stayed with IV heparin, but we're close now with a high comfort level with the other part of the team, the surgeon, to taking a gamble if you like. And I'm putting it deliberately as a gamble because we haven't yet done it in a high number of patients, but because of the increased protection against bleeding, we're increasingly prepared to take the gamble in the next year or two and we probably will.

DR. LABROPOULOS: Russell, what do you think of using D-Dimer as a screen test to exclude DVT or PE and what do you think about the use of spiral CT in detecting pulmonary embolism?

DR. HULL: The D-Dimer test in the future is going to cut down the need for sequential or serial testing by allowing such rapid and sensitive tests as the Eliza assay, to eliminate the diagnosis of deep vein thrombosis and pulmonary embolism in patients in whom the diagnosis is suspected. Spiral CT testing is experimental. PIOPED II, which is an NIH proposal, is undergoing review again, and if the NIH approves funding, there will be a definitive large trial testing the value of spiral CT. If the NIH doesn't fund it, then we'll be left with a chaotic mess because the small trials that have been published show results all over the map.

DR. TRIPATHI: I have a comment and I have a question. The comment is that the role of low molecular weight heparin is fairly well established by meta-analysis presented by Leizorovicz in 1997 which shows that there is a decrease in the extension of thrombosis in the iliofemoropopliteal system by 5.8 percent. There is a decrease in the pulmonary embolism rate by 7.8 percent, death in these patients by 11 percent, and bleeding complications by over 50 percent. These are data which includes over 3,000 patients, and it includes the Canadian and the Tasman trial. My question is: Tom Wakefield presented the inflammatory changes in DVT, and he showed that if you can give anti-inflammatory drugs, you can reduce the thrombus load. The model of DVT which he presented was a stasis model where you ligate the vein and produce thrombosis. A vast majority of patients don't have this stasis type of DVT. They have inflammatory changes which cause endothelial damage and DVT resulting secondary to that. I believe that there may be two different categories of patients, one group that has stasis related DVT and the other grup that has endothelial damage related DVT. In patients who have got stasis type of DVT, low molecular weight heparin would suffice by reducing thrombus extension and thrombus load reducing the inflammatory process which is basically the fibrinogen-complement mediated inflammatory change. In the other, endothelial damage related DVT group, anti-inflammatory drugs may have a role. What do you think about that?

DR. HULL: Low molecular weight heparin has both an antithrombotic and anti-inflammatory effect. Aspirin, both an antithrombotic and anti-inflammatory agent has some effect in the prevention of deep vein thrombosis after hip surgery; the risk reduction using aspirin is about 20%. The risk reductions with heparin and low molecular weight heparin are higher and may be as high as 60-70 percent in certain high risk groups. Drugs like aspirin do not have a potent enough effect to be used in isolation and we do not know if they are additive enough in terms of benefit to overcome the increased risk of bleeding.

DR. RUTHERFORD: I thought the evidence presented was pretty convincing for the treatment with low molecular weight heparin of most, if not all calf DVT. There was a time in the past, when we used indirect noninvasive tests of DVT, that were not good for detecting calf DVT, that we excused that by saying, that there's a low incidence of pulmonary embolus with calf DVT, so it didn't matter. There was a lot of rationalization there. Now, I think once you've detected and visualized a vein clot, even though it propagates in only 10 to 20 percent and has a very small pulmonary embolism rate, because low molecular weight heparin ambulatory treatment has so little risk, it's very hard to argue against treating all but those with a high risk of bleeding complications. So I stand convinced by that argument.

DR. COMEROTA: When you refer to treatment with low molecular weight heparin, I'm assuming that means conversion to oral anticoagulation with Coumadin. How long should anticoagulation continue?

DR. RUTHERFORD: Yes, in a standard fashion, usually for three months. I would also agree with the point that was made that if you have someone with a very high risk of bleeding, let's say someone with a brain tumor or recent operation, that those patients with calf DVT could be monitored closely without anticoagulation.

DR. COMEROTA: Therefore, treatment of most begin with low molecular weight heparin converted to oral anticoagulation for three months. Those patients at risk of a complication from anticoagulation are followed with surveillance duplex examinations. Very appropriate. Andy, any comments?

DR. CRAGG: Well, I had a lot of thoughts. I may have to confine it to one or two here. Let me talk from a radiologic standpoint and just make a comment about some of the things I heard both now and earlier this morning, that is, ultrasound detection of tibial thrombus and how accurate it is. I think one of the things when you order tests in radiology or imaging you think that you send it down and you get a consistent result. Dealing with ultrasound techs who do, of course, almost all of these exams all over the world, there's a big variation in, I think, how accurate it is in terms of looking at tibial veins. It's not an easy thing to do. Most of them are required in our department to check off whether they think the tibials are normal, but I've got to tell you, I bet a lot of times they're guessing.

DR. COMEROTA: That's a very good point, Andy. Assume you're the radiologist on for the day in your hospital. I'm worried that my patient who has tenderness in the calf might have calf DVT. You and I would agree that if your venous duplex was negative from the popliteal and above, we'd be comfortable that there's no blood clot in the proximal venous system. I'm now sending this patient to you with calf tenderness, otherwise healthy, and you don't see any clot in the tibial veins. What's your recommendation to me? Does this mean that there's no DVT, or there is DVT which you missed? Should we bring the patient back in three, four, or five days to repeat the duplex? Should we do a venogram?

DR. CRAGG: If there is a specific request about the tibial veins, ordinarily we sort of gloss over them in a report in using general terms "none seen." That's a little different than saying there isn't any. So if you were to come to me and hopefully visit me and say this is a particular patient in whom I'm worried about the calf veins, then you're going to have to go back and either scan it yourself or go back with a technologist and say, "I need you to tell me -- we need to go down each of these tibial veins." Most of the time, though, when an ultrasound tech tells you "I didn't see any," what they're saying is they looked in the central tibial veins at the confluence with the popliteal vein and they looked at accessible veins around the ankle - the posterior tibial. I don't think it's necessary that they go down each peroneal vein, for instance, all the way to the end.

DR. COMEROTA: If you have seen the tibial veins, identifying the posterior tibial and the peroneal and even the gastroc and soleus, and there's no clot visualized, can we accept that as true, Gene.

DR. STRANDNESS: Dr. Cragg I can give you a reference to the American Journal of Roentgenology that compared power Doppler/color Doppler against venography for calf vein thrombosis. It was found to be very accurate if it's properly done. With regard to venography, a conference sponsored by the NIH several years ago, concluded that venography was generally poorly done in the United States. The other thing which is very important is that the technology and methodology is still evolving. Five years ago there were serious problems particularly for calf veins but now with the addition of color and power Doppler, you can look at not only the tibial veins, and the peroneal, but the soleal sinuses and, as Dr. Moneta pointed out, the gastrocnemius veins as well. This should no longer be a mystery. We do look at these routinely. If your technologists are not doing the examinations properly, then they ought to be taught how to do it properly.

DR. CRAGG: And I couldn't agree more with you, Gene. I just think that there's a difference between that ideal and reality around the United States.

DR. STRANDNESS: I don't disagree with that. I think we have to understand that we can detect calf vein thrombi.

DR. COMEROTA: Let's assume that the diagnosis of calf DVT is reliable. What do you do with that information, Gene.

DR. STRANDNESS: Dr. Brenda Zierler has been looking at our clinical practice at the University Hospital in Seattle and it's really appalling. When we surveyed not only the attending physicians but the residents as well, up to 25 percent of the residents think that the calf veins are superficial veins. A cardiac surgeon thought that the superficial femoral vein was a superficial vein! With this level of understanding, the treatment will by definition be very poor. We also found in our survey that one-half of the physicians think that calf vein thrombosis should not be treated. From an educational standpoint we've got a long way to go.

DR. WAKEFIELD: Ten to twelve years ago, I actually tried in three patients who had arthroscopy, were young, healthy males who had calf vein thrombosis to treat with surveillance when that treatment was on the upswing. All three failed, ending up propagating. So I stopped at that point, and I use low molecular weight heparin for treatment of calf vein thrombosis.

DR. COMEROTA: And three months of oral anticoagulation after that?

DR. WAKEFIELD: Well, yes. We were talking yesterday. There was a recent study in the New England Journal that talked about the length of time for idiopathic DVT for Coumadin therapy, and it probably is for more proximal thrombosis longer than the three to six-month period that we have traditionally been taught. Unfortunately, that study wasn't segregated into the level of the thrombus and how long the oral anticoagulant treatment should be given. So it may be that depending on the level of thrombosis, the length of the Coumadin therapy will be found to need to vary.

DR. THORPE: Just a comment to what Andy brought up and Dr. Strandness addressed, it's even more alarming to me that when you send a patient down for rule out DVT with ultrasound, the technologists normally don't look above the inguinal ligament unless it's specifically requested. That's appalling to me because thrombus is probably missed at that level, especially if you have common iliac thrombus where you have flow into a hypogastric. You still have flow in the common femoral.

DR. COMEROTA: That's a technologist in the vascular laboratory or the radiology department?

DR. THORPE: No. We have a very nice accredited vascular lab where it's shared with surgery and radiology and they're great. But I have to specifically request that they look in the inguinal area or above the inguinal ligament because the reality around the United States is that now, because of a number of articles that have come out, they do a compression test at the common femoral and the

popliteal level. They don't look below the popliteal very much, and they don't look above the inguinal ligament unless requested. We may be missing thrombus that way. But the question Greg brought up on a very nice slide showed the incidence of reflux in segments that were above the calf and an incidence of some valvular incompetence in both extremities in these patients that you were studying. That brings the question do you think that pre existing reflux may be a precursor for an element of stasis in patients? That may be a setup for calf vein DVT depending on lifestyle, or on other elements? And one other question that maybe you all could address is that no one ever says what numbers we're talking about because we don't know the epidemiology very well. Ten percent of a huge number like ten million people per year that might have this condition, diagnosed or undiagnosed, may be a huge number, but we're always minimizing it by saying it's only 2 out of 100 or 10 out of 100. What do you think?

DR. MONETA: I have three comments. One, vascular technologists usually work for you, and they'll do whatever you ask. We ask ours to do complete examinations, pelvic veins down all the way to the ankle. They're reasonable people. You tell them what you would like them to do and they'll do it, whenever possible. The second comment concerns why there is reflux in venous segments, that didn't seem to have had thrombus. I don't know if the reflux was pre-existing or developed later. This wasn't a Level I study. Primary reflux may have predisposed to the development of calf vein thrombosis. The patients may also have had some ongoing hypercoagulable state causing small areas of thrombosis. I think you have to keep in mind that from a public health perspective, one-tenth of one percent of a large number can be very important. It's just that when you're dealing with small numbers in terms of percent the importance to an individual practitioner may be lost, but from an overall perspective and a public health perspective, it can still be very important.

DR. LORD: I'm thinking of ambulatory surgery and the big switch toward ambulatory procedures. Is there any evidence that a single dose of low molecular weight heparin is effective in reducing the incidence of calf venous thrombosis?

DR. COMEROTA: For prophylaxis during ambulatory venous surgery?

DR. LORD: Well, a survey of British vascular surgeons showed that some of them thought it was a good idea. About half of them thought it was a good idea for varicose vein operations, but only about a third actually practiced it.

DR. COMEROTA: Well, do you have any information as to what the incidence of DVT even at the calf level is after ambulatory venous surgery?

DR. LORD: No, I don't.

DR. COMEROTA: I think that might be an important denominator to know to get to the heart of your question. Any panelists have any thoughts or information on that? No. Does anybody on the panel or anybody in the audience for that matter give prophylaxis for ambulatory venous surgery? Raise your hand. For DVT prophylaxis during ambulatory venous surgery, for varicose veins, not SEPS, varicose veins. Okay. Very interesting.

DR. LORD: About a third of British vascular surgeons gave anticoagulant prophylaxis and half thought it was a good idea.

DR. CHARLESWORTH: Can I ask Russell Hull, in the case of a symptomatic calf DVT with just an isolated peroneal vein or tibial vein, can you make a logical case for a one-week course of low molecular weight heparin, which we know will be very good in relieving the symptoms, but <u>not</u> proceeding to warfarin?

DR. HULL: An early study with intravenous heparin followed by no long term treatment in symptomatic calf deep vein thrombosis versus intravenous heparin followed by oral anticoagulants showed that a lack of follow up treatment resulted in a 20 percent recurrent thrombosis rate. Logically, patients will have to be followed up with long term anticoagulants. A randomized, double-blind trial was conducted comparing the safety and efficacy of intravenous heparin combined with oral anticoagulant versus oral anticoagulant alone in the initial treatment of proximal-vein thrombosis. The trial was terminated early because of an unacceptably high incidence of symptomatic extension or recurrence of venous thromboembolism during follow-up in the treatment group of patients receiving only oral anticoagulant. Therefore, it was determined that heparin in addition with oral anticoagulants is required in the initial treatment of patients with proximal-vein thrombosis.

DR. COMEROTA: I'm not sure I follow you, Russell. The absence of data doesn't mean segmental distribution and disease severity is unimportant. It means we don't have the data from the Canadian trials or the low molecular weight heparin trials; is that correct?

DR. HULL: I'll rephrase it another way. We have compelling data showing you don't need to, except for in the calf.

DR. COMEROTA: If you're going to anticoagulate everybody?

DR. HULL: Yes.

DR. COMEROTA: I think this slide speaks to the question that was just asked. These data were reported by Lagerstedt from a prospective randomized trial, -- These are Level 1 data; correct?

DR. HULL: That's what I was referring to.

DR. COMEROTA: This trial used standard unfractionated heparin in patients who had venographically proven isolated calf vein thrombosis randomized for five days to anticoagulation with unfractionated heparin IV alone vs. heparin converted to 3 months of oral anticoagulation. 29 percent of those treated with only 5 days of Heparin returned within a year with recurrent venous thromboembolic complications versus those that were treated with oral anticoagulation for three months, who had no recurrent venous thromboembolism. I think that at least addresses the issue of short-term anticoagulation with unfractionated heparin. Whether these data would be altered with low molecular weight heparin is unknown.

DR. STRANDNESS: I wanted to ask Dr. Hull a question. One of your former colleagues, Jack Hirsh, wrote an editorial in the New England Journal of Medicine which stated that if you had DVT with a reversible risk factor, say an operation, it was not necessary to treat for three to six months. You might get by with six weeks of therapy. It seems to me in the calf vein situation this might be exactly what you're talking about. Dr. Hull, what is your view on the six-week paradigm that Jack suggested in that editorial?

DR. HULL: There is hope that treatment could last for less than three months in somebody with a reversible risk factor, but data are limited. Genetic mutations must also be considered. Twenty percent of patients presenting with deep vein thrombosis in the U.S. and Canada have identifiable genetic mutations. These patients may do poorly even two years after stopping treatment depending on the genetic mutation. A randomized trial looking at home treatment with low molecular weight heparin for three months or low molecu-

lar weight heparin for six days followed by Coumadin is underway. Coumadin has the same frailties as heparin. You have to monitor it. If you get outside the therapeutic range, you'll have recurrences and you will have bleeding if you go above it. In addition to the safety data, quality of life is the key measure. We will determine exactly how many people have the post-phlebitic syndrome. European data are now pointing out that if you ambulate the person early, the thrombotic mass as demonstrated in repeat imaging data, is less and therefore, the post-phlebitic syndrome may be less. With low molecular weight heparin programs, the patients can more readily ambulate even if they are in the hospital. Further, 37% of patients on low molecular weight heparin in our treatment trial could have been discharged on the second day of treatment. The cost-effectiveness of the low molecular weight heparin is demonstrated for both in-hospital and out-of-hospital treatment. In many centers in Canada, up to 70% of patients with deep vein thrombosis are now being treated at home.

DR. ABU-BAKER: Why DVT is localized to one leg, and not in both of them, especially after surgical operation, for example, after appendicitis, cesarean section, total hysterectomy, and abortion? The second question, can the superficial thrombophlebitis produce DVT, and if yes, how?

DR. MONETA: I can take a crack at the second question. Can you have a deep venous thrombosis associated with superficial thrombophlebitis? My understanding of the data is that superficial venous thrombosis can be followed by deep venous thrombosis. Probably 10 to 15 percent, of patients presenting with superficial phlebitis, have a co-existing deep venous thrombosis.

DR. COMEROTA: Aside from the co-existing DVT, have any of the panelists observed a patient with initial superficial, that is greater saphenous or lesser saphenous phlebitis, extend through the perforators and involve segments of the deep system? The second part, to the question, have any observed extension through the saphenofemoral junction and involve the common femoral vein? I've seen the latter, but I have not seen the former.

DR. STRANDNESS: Anyway, I've worried about this, and I've watched greater saphenous thrombophlebitis progress right up to the fossa ovalis, but I've never seen it extend into the common femoral vein. I've been worried about this because what do you do with these patients? I'm sure it happens, but I've never seen it.

DR. KISTNER: I'm sure that we have seen it progress through the saphenofemoral junction and give a highly inflamed very bad common femoral and femoroiliac thrombosis, but I've never seen it go through perforators.

DR. COMEROTA: The other question that was raised, if people are going to get DVT, especially post-op, why don't they get it in both legs? Why do we see it in only one most of the time?

DR. STRANDNESS: 17 percent of them do.

DR. COMEROTA: But the majority of them do not.

DR. STRANDNESS: I know, but if you look at both legs when you're looking at a patient with DVT, it's not terribly uncommon in the opposite leg, but I agree with you. It's not universal.

DR. COMEROTA: Therefore, the answer is we don't know. Then one other question with all of the experts on the panel. All of you have observed that the anterior tibial vein very rarely is involved with DVT. What is so special about the anterior tibial vein that protects it from deep venous thrombosis?

DR. MONETA: I don't know. The anterior compartment is also the one that's most susceptible to compartment syndrome. Maybe the pressure in that compartment is slightly higher.

DR. COMEROTA: So you think it's something external to the vein rather than intrinsic to the vein?

DR. MONETA: Yes. I can't imagine why it would be intrinsic to the vein.

DR. COMEROTA: In patients with calf DVT should we do hypercoagulable workups? What is the role of compression, Greg?

DR. MONETA: In my practice I do a hypercoagulable workup with the first DVT if there is no identified reason for the DVT. If the patient develops a second venous thrombosis, then a hypercoagulable workup is always done. We treat anyone with any form of lower extremity venous thrombosis with 30 to 40 millimeter gradient compression stockings.

DR. KISTNER: We're very similar. I think we are doing more hypercoagulable panels on patients and just using that as a marker for being more aggressive about following the patient, perhaps treating them at the time, but calf vein elastic stockings for everybody.

DR. HULL: There is hypercoagulable screening in all irrespective of the site for a very practical reason. The proband if you find genetic defects -- and we are in 20 percent of patients and that includes having hip surgery. So idiopathic, obviously you get a better yield, but people who go to surgery still have genetic mutations. Think about public health. I'll give you 15 seconds as a very good reason to screen. I think about Europe, and for those of you European based, there's been a lot of debate about screening before you use a particular drug. Okay. So I'll answer those two questions. The female blood line members of the family are going to be exposed to the oral contraceptive pill and hormonal replacement therapy. If you do that in somebody with a genetic defect like Leiden, you'll knock the risk up 30 to 40-fold.

DR. COMEROTA: Only if you use third generation progesterones though, not if you use some of the others.

DR. HULL: No. That's a separate issue. So let's come back to that in a moment. If you're a female and you wish to take the oral contraceptive pill, in Europe they're now talking about screening because if you have the Leiden gene, which is one of the common ones, your risk on any OCP or HRT is 30 to 40-fold increased if you have the genetic defect and no history of DVT. The first is published. The second is available from our colleagues in the United Kingdom, and that's irrespective of the pill. The third generation progesterone issue is an issue separate to that, and that is it's nastier than some of the other pills. So that's a degree of risk within the use of OCPs. So basically if you have a young woman who wants to use the OCP and has the Leiden gene, it's absolutely contraindicated to do so, and if you're older, in our range, so to speak, and you are a female and you wish to use HRT, the answer is no. It's contraindicated. So we are actually screening in very large scale and intervening in the public health of many of the family members of the probands.

DR. WAKEFIELD: Russell, would it be reasonable to do a mini screen, to do pro-thrombin 20210A and Factor V Leiden and not do Protein C, Protein S, and all the other tests?

DR. HULL: If you're talking about yield, you're making an excellent point because the yield out of that 20 percent will be 16 percent for those two, but the other four percent are there. So our lab

has bitten the bullet and does everything that we can currently do to give us the 20 percent, which is the remaining four percent that you'd miss.

DR. STRANDNESS: Did I understand you, Dr. Hull, that you screen everybody with DVT? Did you also say that you screen everyone who has a total hip? Are you going to screen our whole population?

DR. HULL: No. I just said we screen all patients who have DVT or PE.

DR. STRANDNESS: Even if a patient has a reversible risk factor like a surgical operation or a total hip, something like that, you would still screen them?

DR. HULL: Yes, because we wish to know the answer to your question as to whether it's worthwhile. So idiopathic I think you'd agree we screen.

DR. STRANDNESS: But you didn't say that. You said you screened everybody essentially.

DR. HULL: We do.

DR. COMEROTA: Everybody with DVT or PE?

DR. STRANDNESS: Where is the Level I data?

DR. HULL: We're trying to generate the Level I data, but obviously we'll withdraw it from hip patients if we find the yield is low, but the point is it's not. I suppose the other key point is eight percent of the people in this room, looking at the faces that's a fair statement, and if you came from the Middle East it's 20 percent, have the Leiden gene. Staggering, isn't it? Now, most of us don't get thrombosis right off the bat or we'd have an army of thrombosis to deal with it, but the Leiden gene is a very common single gene mutation, and it's made thrombosis the commonest genetic disease which is a real twist in ten years from acquired disease to genetic. So eight percent in this room, twiggle your toes when you're flying back, whether you go first class or coach.

ILIOFEMORAL DVT – AMBULATORY TREATMENT

Hugo Partsch, MD
Wilhelminen Hospital
Vienna, Austria

INTRODUCTION

The important question of mobilization and physical activity in the management of DVT is not mentioned in most therapeutic reports including the large randomized trials advocating home-therapy.[1,2] For us the term "ambulatory" means that walking should be encouraged and bed-rest should be avoided. This may be done in the hospital or at home.

Three main questions are to be discussed:

1. Can patients with iliofemoral DVT be treated at home?
2. Do patients with iliofemoral DVT need bed rest?
3. What are the benefits from aggressive ambulation with compression?

1. Can Patients With Iliofemoral DVT Be Treated at Home?

The most important undesirable events which may occur during the management of DVT and which are better to be handled in the hospital than at home are:

- death.
- new pulmonary emboli.
- bleeding complications.
- HIT II reaction.

Based on a series of 1,111 consecutive patients with acute DVT, the influence of the following variables on these events was analyzed:

- age.
- localization of DVT.
- previous DVT.
- presence of primary PE.
- presence of malignancy.

The cohort of 1,111 patients which was admitted to the hospital between May 1992 and December 1998 was treated by subcutaneous injections of low-molecular weight heparin (preferably dalteparin, 200 IU/kg body-weight b.i.d.), compression bandages and walking exercises. Major parts of our experience with this regime have been published.[3,4]

As it is demonstrated in Tab. I an increased risk concerning fatal events, all investigated by autopsy, could be shown for higher age, iliofemoral localization of DVT, and for the presence of malignancy. Three patients died from pulmonary embolism: a 98-year-old man immediately after admission, an 87-year-old-lady on day 3 presenting additionally myocardial infarction and a 76-year-old-man with additional metastases in the liver. In another 14 cases other causes for a fatal outcome, predominantly malignant disorders, were found.

1,062 patients were investigated by a baseline-V/Q-lung scan which was repeated after 10 days on average. The results are shown in Table II. Most of the pulmonary emboli were clinically completely silent. Very careful interviewing revealed some dyspnoea during walking in about one-third of the patients. Only 6/1,062 patients presented a worsening of pre-existing symptoms or new dyspnoea.

Concerning the occurrence of new pulmonary emboli, although clinically silent in most cases, only the presence or absence of malignancy could be shown to have significant influence (Tab. III).

Bleeding complications (4 major bleedings/1,111 patients) and a **HIT II -reaction** (2 cases) were rare and did not show any correlation with the calculated risks.

From this analysis it may be concluded that DVT-patients with higher age, with iliofemoral thrombosis and with concomitant malignant disorders are not good candidates for home-therapy.

2. Do patients with iliofemoral DVT need bed rest ?

In most centers patients with thrombi extending into the pelvic veins are immobilized at least for some days because of the fear of pulmonary embolism.

As can be seen in Tab. II pulmonary embolism is already present at admission in about 50% of the patients with proximal DVT without causing severe symptoms in the majority of cases. The rate of new pulmonary emboli detected by repeated lung-scanning is 7.3% in our patients with iliofemoral DVT and 5.8% in the total

DVT population. This event is significantly lower compared to published data using conventional therapy (Tab. IV).[3] The same is true for fatal pulmonary embolism which was proved by autopsy in 3 patients, all of them admitted because of iliofemoral DVT.

Investigating patients with iliofemoral DVT by MRI scanning, an unexpectedly high rate of thrombi which extend into the common iliac and into the inferior caval vein, may be detected. MRI phlebography performed on 189 patients with proximal DVT revealed parts of the thrombi in the inferior caval vein in 35 patients (18.5%).

The outcome of this group, also treated by compression, walking and dalteparin in 34 patients and by thrombectomy in one 17-year-old boy with venous anomalies was quite favorable: (Tab. V and VI).

From these data we may conclude that bed rest is not necessary even in patients with thrombosis extending into the caval vein, at least as long these patients were mobile before admission.

3. What are the benefits from aggressive ambulation with compression?

In a randomized, controlled trial in 45 patients with proximal DVT it could be demonstrated that compression leads to a significantly faster regression of pain and of leg-swelling, and that there is less thrombus progression compared to bed-rest.[5] For an optimal outcome immediate acceleration of venous blood-flow by compression and by walking is probably of similar importance like the exact anticoagulation in the first 24 hours.[6]

CONCLUSION

Our conservative management of symptomatic outpatients with deep vein thrombosis is based on anticoagulation, compression and walking exercises. This regime is independent from localization and morphology of thrombi (floating or not).

Based on an analysis of a total of 1,111 consecutive patients with DVT, 318 extending into the iliofemoral segment (18% reaching into the inferior cava), we recommend to treat such proximal cases, patients older than 70 years and patients with concomitant malignant disorders, preferably in the hospital. All mobile patients are kept "ambulatory" since immediate and intensive walking is considered to improve the outcome.

References

1. Koopman MMW, Prandoni P, Piovella F, Ockelford PA, Brandjes DPM, van der Meer J, Gallus AS, Simmoneau G, Chesterman CH, Prins MH, Bossuyt PMM, de Haes H, van den Belt AGM, Sagnard K, d'Azemar P, Büller HR . Treatment of venous thrombosis with intravenous unfractionated heparin administered in the hospital as compared with subcutaneous low-molecular-weight heparin administered at home, *N Engl J Med.* 1996;334: 682-687.
2. Levine M, Gent M, Hirsh J, Leclerc J, Anderson D, Weitz J, Ginsberg J, Turpie AG, Demers C, Kovacs M, Geerts W, Kassis J, Desjardins L, Cusson J, Cruickshank M, Powers P, Brien W, Haley S, Willan A. A comparison of low-molecular-weight heparin administered primarily at home with unfractionated heparin administered in the hospital for proximal deep-vein thrombosis, *N Engl J Med.* 1996;334 :677-681.
3. Partsch H, Kechavarz B, Mostbeck A, Köhn H, Lipp C. Frequency of pulmonary embolism in patients who have iliofemoral deep vein thrombosis and are treated with once- or twice-daily low-molecular-weight heparin, *J Vasc Surg.* 1996;24:774-782.
4. Partsch H, Kechavarz B, Köhn H, Mostbeck A. The effect of mobilization of patients during treatment of thromboembolic disorders with low-molecular-weight heparin, *Int Angiol.* 1997;16:189-192.
5. Partsch H. Aggressive ambulation in symptomatic deep vein thrombosis. European Congress of the Union Internationale de Phlébologie, Bremen Sept. 26-Oct 1, 1999
6. Hull RD, Raskob GE, Hirsh J, Jay RM, Leclerc JR, Geerts WH, Rosenbloom D, Sackett DL, Anderson C, Harrison L, Gent M. Continuous intravenous heparin compared with intermittent subcutaneous heparin in the initial treatment of proximal-vein thrombosis, *N Eng J Med.* 1986;315:1109-1114.

Table 1.– Risk factors for fatal events (up to 6 weeks after admission) in DVT

Fatality	yes	no	stat. diff.	OR(95% CI)
Age >70	**16**	**492**		**19,67 (4,24-91,4)**
Age< 70	1	605	p<0,001	
iliofemoral DVT	**11**	**278**		**4,76 (1,76-12,88)**
no iliofemoral DVT	6	722	p<0,01	
Malignancy	**10**	**191**		**6,78 (2,71-16,96)**
No malignancy	7	906	p<0001	

Table 2. – Incidence of pulmonary embolism (PE) in baseline and repeated lung scan.

	Iliofemoral (a)	femoropopliteal (b)	lower leg (c)	p-value
Primary PE	159/310 (51.3%)	299/578 (51.7%)	74/209 (35.4%)	a/c, b/c p<0.01
symptomatic PE	29.6%	29.8%	35.1%	n.s.
new PE's	22/300 7.3%	33/563 5.9%	7/199 3.5%	n.s.
new PE symptoms	4	2	0	

Table 3.– Risk factors for new pulmonary emboli (1062 patients with repeated lung-scan)

New PE's	yes	no	stat. diff.	OR (95% CI)
Age >70	34	455	n.s.	1,45 (0,83-2,56)
Age< 70	28	545		
iliofemoral DVT	22	278	n.s.	1,43 (0,78-2,61)
no iliofemoral DVT	40	722		
Malignancy	18	172	p<0,05	1,97 (1,07-3,61)
No malignancy	44	828		

Table 4.– Comparison of our data concerning the incidence of pulmonary embolism with the literature.

	n	Primary PE	New PE
Literature	907	506 (55,8%)	114 (12,6%)
LMWH, compression, walking	1062	514 (48,4%)	**62 (5,8%)** ***

Table 5.– Follow-up of 35 patients (1 months -6 years) with thrombi in the inferior caval vein

Drop-outs	2			
Follow-up only 1month	3			
Deaths	6	84 f	3 months	at home
		89 f	4 months	at home
		54 m	1 year	Hypernephroma
		51 m	2.5 years	Colon-carcinoma
		70 m	3 years	MCI
		88 f	5 years	Hypernephroma
Re-examination	24			

Table 6.– Re-examination of 24 patients with cava thrombosis between 4 months and 6 years

Readmitted before reinvestigation:	10		
contralateral DVT	3	After 2 months	(Marcoumar)
		After 2 years	(Marcoumar)
		After 5 years	(no anticoagulation)
pulmonary embolism	2	After 1month	(Marcoumar)
		After 1 month	(LMWH)
other causes	5		
Pain	3	Swelling	8
Compression	16	Anticoagulation	16 (11 Marcoumar, 3 LMWH, 2 ASS)

CATHETER-DIRECTED THROMBOLYSIS FOR SYMPTOMATIC LOWER EXTREMITY DEEP VEIN THROMBOSIS

Mark W. Mewissen, MD
Wisconsin Heart and Vascular Clinics
Milwaukee, Wisconsin, USA

ABSTRACT

A national Venous Registry was organized to study catheter-directed thrombolysis (CDT) for the treatment of symptomatic lower extremity deep vein thrombosis (DVT). Between January 1995 and December 1996, 287 patients with lower limb DVT were prospectively treated with CDT. There were 137 (48%) males and 150 (52%) females averaging 47.5 years of age (range: 1-98). Based on symptoms duration, 66% presented with acute DVT (≤10 days), 16% with chronic DVT (>10 days) and 19% with both acute and chronic DVT. From the venograms, Grade I (<50% lysis), Grade II (>50% lysis) or Grade III (complete lysis) were calculated. Based on follow-up duplex scan evaluations, 1-year cumulative primary patencies were derived for different subgroups and compared using life-table methods. Iliofemoral DVT (IFDVT) were present in 221 (71%) and femoral-popliteal DVT (FPDVT) in 79 (25%). Following 7.8 million iu urokinase (range: 0.5-44.0) administered over a mean of 53.4 hours (range: 2.0-147.3), metallic stents were deployed to treat lesions uncovered in 99 iliac veins and 5 femoral veins. Grade III lysis was achieved in 31%, Grade II in 52% and Grade I in 17%. For acute limbs, Grade III lysis occurred in 34% compared to 19% for chronic limbs ($p<0.01$). Major bleeding complications were reported in 11.5% patients, most often occurring at the puncture site. Two patients died: one fatal PE and one intracranial hemorrhage for a mortality rate of 0.04%. For all limbs, the 1-year primary patency was 60%. Treated IFDVT was more durable than FPDVT (64% versus 47%; $p<0.01$). Lysis grades were major predictors of patency: for Grade III, Grade II and Grade I lytic outcomes, the 1-year patencies were 79%, 58% and 32% respectively ($p<0.001$). CDT is safe and effective. Data from the Venous Registry can serve as a guide to judicious patient selection for this potentially effective form of therapy.

SUMMARY

GOALS OF TREATMENT

Elimination of the embolic potential of existing thrombus, restoration of unobstructed flow, prevention of further thrombosis and preservation of venous valve function, are the ideal goals of therapy for acute DVT. Meeting these goals will not only prevent PE but will also minimize the long-term sequelae of venous hypertension and the development of the post-thrombotic syndrome. Multiple treatment options including anticoagulation, surgical venous thrombectomy, and thrombolytic therapy achieve these goals to a variable degree. For instance, while anticoagulation with heparin followed by coumadin therapy is definitely effective in minimizing PE and recurrent thrombotic episodes, it does not prevent the post-thrombotic syndrome.[1] In fact, with anticoagulation alone, restoration of venous patency relies solely upon individual endolytic corrective processes. Furthermore, even with therapeutic heparin anticoagulation, 30-40% of patients will show extension of their DVT and only 20-25% will have venographic evidence of partial thrombolysis.[2,3] Treatment strategies aimed at eliminating or reducing the risk of PTS should focus on preserving valvular function and eliminating the risk of continued venous obstruction following acute DVT. Surgical removal by means of thrombectomy techniques combined with creation of arteriovenous fistulas have been employed successfully in Europe and the United States,[4,5] but overall such procedures have not been commonly performed. Thrombolytic agents are an attractive form of early therapy because they have the ability to eliminate obstructive thrombus in the deep veins and should therefore help provide protection against the PTS. The perceived benefits of early and rapid recanalization in preserving valve function have been the basis for the use of lytic therapy to treat acute DVT.[6,7]

THROMBOLYTIC THERAPY: RATIONALE

There is good documentation that systemic thrombolytic therapy is

superior to heparin anticoagulation alone in achieving early lysis of the deep veins. In a pooled analysis of 13 randomized studies, Comerota and Aldridge found that only 4% of patients treated with heparin had significant or complete lysis, compared to 45% of patients randomized to systemic streptokinase therapy.[8] Furthermore, in the heparin group, as many as 82% had no venographic evidence of lysis or clearly demonstrated thrombus extension, compared to 37% in the streptokinase group. Similarly, in reviewing pooled data from 6 trials judged to have proper randomization, systemic thrombolysis was 3.7 times more effective in producing some degree of lysis than was heparin.[9] From these data, there is objective evidence that systemic thrombolysis is more effective than anticoagulation in promoting early lysis.

Two studies reported late clinical outcome following randomization to either anticoagulation or systemic streptokinase for acute lower limb DVT.[10,11] Although the follow-up periods in both studies were different, 1.6 years[10] versus 6.5 years,[11] the majority of patients with severe symptoms of the PTS received anticoagulation alone. In both reports, the majority of patients who received streptokinase were free of the PTS. Although both studies suffer from small sample sizes and lack of objective measures to grade the PTS, it can, nonetheless, be suggested that systemic thrombolysis improves anatomic and clinical outcomes when compared to anticoagulation alone. Long-term improved venous hemodynamics and preservation of valvular function have not been well documented following systemic lytic therapy. In a long-term randomized follow-up study,[12] popliteal venous valve incompetence, measured by direct Doppler examination, was more common in patients randomized to anticoagulation versus systemic streptokinase. Nine percent of patients successfully lysed had an incompetent valve compared with 77% of those who did not lyse. This study, however, has not been published in peer-reviewed journals and still resides in the format of an abstract.

CATHETER-DIRECTED THROMBOLYSIS

Over the past 10 years, catheter-directed thrombolysis techniques have been proved effective in the endovascular treatment of acute limb ischemia secondary to acute native arterial or bypass graft thrombotic occlusions.[13] Delivering thrombolytic agents by means of low-profile infusing catheters and guide wires placed directly into the occlusion under fluoroscopic guidance offers several advantages over systemic lytic therapy. Because highly concentrated plasminogen activators can be delivered directly into the thrombus, treatment duration can be reduced, complete lysis rates improved, and lower incidence of bleeding and other complications associated with systemic therapy can be expected. Second, the technique allows for supplemental endovascular treatment of uncovered hemodynamic lesions by means of balloon angioplasty or stent technique.[14] Similar regional catheter-based lytic treatments have been recently applied towards ilio-femoral DVT.[8,15] In a series of 25 patients treated with catheter-directed thrombolysis for ilio-femoral DVT by Semba and Dake,[15] complete lysis was achieved in 18 (72%) patients, swelling was successfully reduced in all but one. Only one patient suffered a bleeding complication of heme-positive stools. After the drug was discontinued, there were no significant adverse sequelae. This initial report suggests that catheter-directed lytic therapy for patients with lower extremity DVT can be effective in achieving significant lysis of clot and may be associated with low complication rates.

This experience stimulated the development of a multicenter venous registry, which was recently closed after enrollment of nearly 500 patients.[16] Completed data with follow-up of at least 6 months were available on nearly 300 patients, 70% of which were IFDVT, as determined by venography. Nearly 40% required a stent in the iliac vein, to relieve an obstruction or a stenosis uncovered after catheter-directed thrombolysis treatment. Significant lysis (> 50%) was achieved in 80% of the limbs and approximately 30% achieved complete lysis. A complete lytic event was more commonly achieved for acute DVT (<10 days) which was present in about 60% of the patients. The lysis grade obtained after lysis and stenting was a major predictor of continued patency. At 6 months, approximately 70% of limbs with significant lysis remained patent, and for acute limbs, when complete lysis was achieved, 90% remained patent. Reflux at follow-up at 6 months was found in less than 30% of those with complete lysis, 45% of those with >50% lysis and over 60% with <50% lysis. There have been only 2 deaths in the entire study (0.4%), one from an intracranial hemorrhage and one of six patients who suffered a PE. The use of the popliteal vein with ultrasound guidance appears to be favored and will likely become the standard access site for most patients.

References:

1. Meissner MH, Manzo RA, Bergelin RO, et al. Deep venous insufficiency: The relationship between lysis and subsequent reflux, *J Vasc Surg.* 1993;18:596-608.
2. Strandness DE. Thrombus propagation and level of anticoagulation, *J Vasc Surg.* 1990; 12:497-498
3. Krupski WC, Bass A, Dilley RB, et al. Propagation of deep venous thrombosis by duplex ultrasonography, *J Vasc Surg.* 1990; 12:467-475.
4. Plate G, Einarsson E, Ohlin P, et al. Thrombectomy and temporary arterio-venous fistula in acute iliofemoral venous thrombosis, *J Vasc Surg.* 1984;1:867.
5. Comerota A, Aldridge SC, Cohen G, et al. A strategy of aggressive regional therapy for acute iliofemoral venous thrombosis with contemporary venous thrombectomy or catheter-directed thrombolysis, *J Vasc Surg.* 1990;20:244-254.
6. Truebstein G. Can thrombolysis prevent post phlebitic syndrome and thromboembolic disease? *Haemostasis,* 1986;3:38-50.
7. Kakkar VV, Howe CT, Laws JW, et al. Late results of treatment of deep vein thrombosis, *Br Med J.* 1969; 1:810-811.
8. Comerota A, Aldridge SC. Thrombolytic therapy for deep venous thrombosis: A clinical review, *CJS.* 1993;36:359-364.
9. Goldhaber SZ, Buring JE, Lipnick RJ, et al. Pooled analysis of randomized trials of streptokinase and heparin in phlebographically documented acute deep venous thrombosis, *Am J Med.* 1984; 76:393-397.
10. Elliot MS, Immelman EJ, Jeffrey P, et al. A comparative randomized trial of heparin versus streptokinase in the treatment of acute proximal venous thrombosis: An interim report of a prospective trial, *Br J Surg.* 1979; 66:838.
11. Arnesen H, Heilo A, Jakobsen E, et al. A prospective study of streptokinase and heparin in the treatment of deep vein thromsosis, *Acta Med Scand.* 1978; 203:457.
12. Jeffrey P, Immelman E, Amoore J. Treatment of deep vein thrombosis with heparin or streptokinase: Long-term venous function assessment (abstract No. S20.3). In: *Proceedings of the Second International Vascular Symposium,* 1989.
13. Kandarpa K. Technical determinant of success in catheter-directed thrombolysis for peripheral arterial occlusions, *J Vasc Interv Radiol.* 1995;18:367-372.
14. Ouriel K, Shortell CK, De Weese JA, et al. A comparison of thrombolytic therapy with operative revascualarization in the initial treatment of acute peripheral arterial ischemia, *J Vasc Surg.* 1994; 19:1021-1030
15. Semba CP, Dake MD. Iliofemoral deep venous thrombosis: aggressive therapy with catheter-directed thrombolysis, *Radiology.* 1994; 191:487.
16. Mewissen, MW, Seabrook, GR, Meissner, MH, Cynamon, J, Labropoulos, N, Haughton, SH. Catheter-directed thrombolysis for lower extremity deep vein thrombosis: report of a national multi-center registry, *Radiology.* April 1999.

PHARMACO-MECHANICAL VENOUS THROMBOLYSIS

Andrew H. Cragg, MD
Fairview University Medical Center
Minneapolis, Minnesota, USA

INTRODUCTION

Pharmacologic dissolution of intravascular thrombi using lytic agents has established itself as a useful adjunct to many forms of revascularization, both surgical and interventional. The most widespread use of thrombolytic therapy has been in the treatment of arterial thrombosis in the lower extremities. Thrombosed native arteries and bypassed grafts can be effectively revascularized with catheter directed infusion therapy using one of several lytic agents. For most interventionalists, urokinase is the lytic agent of choice because of its predictable action and acceptable side effect profile.

We recently published a randomized study reviewing two different protocols for infusion lytic therapy of thrombosed peripheral bypass grafts and native arteries. Two dosing protocols from 50,000 units/hour of urokinase to 250,000 units/ hour were found to be equally effective in lysing both acute and chronic thrombi, however, the time to lysis was 20-30 hours requiring overnight infusion and observation in an intensive care setting.[1]

We and others have begun examining a variety of new devices and techniques to speed up the lytic process when revascularization is required in a variety of vascular beds. These techniques allow us to rapidly open thrombosed vascular conduits in a single procedure and in some situations, lytic therapy can be used on an outpatient basis.

LYTIC TECHNIQUES

Infusion Therapy

Introduction of a lytic agent through a catheter imbedded in a thrombosed vessel or a bypass graft is an effective means of achieving complete thrombolysis, but one significant limitation is the time it takes for completion of the procedure. This is due in part to the time it takes for the lytic agent to penetrate the thrombus along the length of the occluded segment. To speed up this process we have developed a series of catheters for more effective infusion of lytic therapy. One catheter is a multi side-hole catheter which delivers lytic agent in an even fashion along the length of the infusion segment. Infusion segments vary between 5-20 cm. The catheter has a valve at the tip which allows passage of the catheter over a guide wire but which seals after the removal of the guide wire to allow only side-hole infusion. Another variation of this catheter uses a coaxial design to tailor the length of the infusion segment to the length of the occluded vascular segment. Another device which enhances delivery of the lytic agent to the periphery of the thrombosed vessel is the shape memory, infusion wire which we have developed. This device gradually reforms into a coiled configuration to approximate the vessel wall as lytic therapy progresses. With these devices, coaxial infusions can be performed so that long vascular segments can be treated with infusion therapy.

Pulse Lytic Therapy

Many interventionalists favor pulsed delivery of the lytic agent into the thrombus in order to accelerate the lytic process. With this technique, small boluses of urokinase are delivered in a forceful manner to form jets out of the side holes of an infusion catheter. The side-hole valve tipped infusion catheter we've developed allows for more convenient application of this technique since the catheter can be placed over a wire and then used for pulsed lytic therapy without additional tip occluding wires or coaxial devices.

Pharmaco-Mechanical Lytic Therapy

Agitation of the thrombus during delivery of the lytic agent may further accelerate the lytic process. We are currently testing the use of the Thrombolytic Brush to effect a combination of pharmacologic and mechanical lysis. The device consists of a soft nylon brush which is rotated at relatively low rpms during the delivery of a lytic agent. The brush agitates thrombus and enhances delivery of the lytic agent to the thrombus. The device is presently approved for use in thrombosed dialysis fistulas and we are currently investigating in pre-clinical studies the use of the device in peripheral arteries and veins. Further development of devices such as these may allow the majority of thrombosed peripheral vessels to be revascularized with lytic therapy in a single sitting. Other devices use a venturi effect from high-pressure saline injection to aspirate thrombus. Different devices may be more beneficial in certain situations than in others.

VENOUS DISEASE

Deep venous thrombosis is a common medical condition with major morbidity for those affected. Acutely, patients may develop painful phlegmasia and chronically a large percentage of patients develop venous stasis problems secondary to valvular dysfunction. Heparin is generally ineffective in preventing the long-term complications of deep venous thrombosis which occur in 50-80% of patients.

Recently, investigators have begun to advocate catheter directed lysis of deep venous thrombosis in order to decrease the acute symptoms and preserve vein patency and valve function. While the long-term clinical efficacy of this technique is not yet established, it has been demonstrated that venous thrombi can be readily lysed using catheter-directed therapy. Disadvantages of this technique however, include relatively cumbersome catheterization from a retrograde approach and the long times associated with lysing venous clots.

Mechanical and pharmaco-mechanical thrombolysis may make this procedure more rapid and efficacious. We have recently developed a technique and protocol for antegrade catheterization of the deep venous system in the lower extremity which allows simplified access, better patient tolerance and placement of long coaxial infusion systems.[2] In experimental models, we have demonstrated that venous thrombi can be rapidly dissolved with the Thrombolytic Brush and we anticipate clinical trials with this device in the future. Our goal with lytic therapy and deep venous thrombosis is to provide complete lysis and vein patency in several hours rather than several days.

DIALYSIS ACCESS

The rapid flow through a surgically placed arteriovenous fistula invariably leads to turbulence and pannus formation in the outflow vein near the venous anastomosis. In patients with forearm dialysis access grafts, this often results in narrowing of the outflow vein,

restriction of flow through the fistula and subsequent thrombosis. To preserve patency of the dialysis access after it is thrombosed, it is essential to correct the underlying venous outflow restriction. Recently, many practitioners have found it useful to combine the advantages of thrombolytic therapy and balloon angioplasty in a fluoroscopic suite where the anatomic status of the arterial and venous segments of the fistulas can be accurately determined.[3,4] In general, access to the radiographic interventional room is more easily obtained than to the standard operating room. In some centers, this has facilitated a shift of patients from traditional operative thrombectomy to fistula revascularization using lytic therapy and angioplasty of the venous outflow. Early results using streptokinase for fistula thrombolysis were disappointing.[4] However, newer developments including the use of urokinase and multiple catheters for more complete fistula lysis have improved the success of the procedure. In general, the acute success in revascularizing thrombosed fistulas exceeds 90% with lytic therapy and angioplasty.[6]

While lytic therapy can be less invasive than surgical thrombectomy, one disadvantage is the frequent need for overnight hospital admission to complete the lytic procedure. This adds to the cost of the procedure and can inconvenience the physician and the patient because dialysis schedules are often performed on an every-other-day basis. A method for nonsurgical, outpatient revascularization of the thrombosed fistula should provide an attractive alternative to existing methods both from a clinical and a financial standpoint. Recently, techniques for revascularization have been re-ported using maceration of clot,[7] pulsed spray administration of lytic agent,[8] or embolization of thrombus without use of lytic agents.[9] These techniques high-light a trend toward outpatient management of this clinical problem. With these techniques, successful revascularization has been achieved in 90-95% of patients. Secondary patency for these fistulas averages about 6 months in most series and points out the fact that dialysis fistulas require routine maintenance with repeat procedures in order to maintain their viability. The large number of procedures and the need for repeat procedures suggests that a method for rapidly revascularizing fistulas on an outpatient basis would be very useful.

All revascularization procedures, including surgical thrombectomy, thrombolysis and iatrogenic embolization as described by Trerotola,[9] result in pulmonary embolism to some degree. There is a long clinical history with surgical thrombectomy to suggest that this is relatively well tolerated. With lytic therapy, emboli tend to be small and are generally laced with a lytic agent which should facilitate their dissolution in the pulmonary vascular bed. There is now a large experience with lytic treatment of dialysis access thrombosis and symptomatic pulmonary embolism has not been a significant clinical problem. The technique of Trerotola in which the thrombus occluding the fistula is deliberately embolized to the lungs without lytic therapy suggests that even larger volumes of thrombus can be well tolerated in most patients. The comments of Dolmatch et al. regarding this technique, however, point out the fact that many dialysis patients have poor cardiopulmonary reserve and care should be exercised in limiting the degree of pulmonary embolism associated with the procedure.[10]

One method for accelerating the lytic procedure involves maceration of the thrombus during delivery of the lytic agent. Mechanical agitation of the thrombus which facilitates mixing of the lytic agent with the thrombus has been shown to rapidly accelerate lysis. This type of mixing can be accomplished in a reproducible and controlled manner with the Thrombolytic Brush. Animal studies suggest that fistula thrombolysis can be accomplished in a matter of minutes without significant pulmonary embolization.[10]

With this technique, short vascular access sheaths are placed into the arterial and venous limbs of the thrombosed fistula. The venous outflow is then studied by diagnostic venography and stenoses in the venous outflow are dilated by balloon angioplasty. 250,000 units of urokinase mixed with 2,000 units of heparin are then delivered in a divided dose into the arterial and venous limbs of the fistula. The Thrombolytic Brush is then introduced and used to gently mix the lytic agent and the thrombus. This agitation usually results in complete lysis of the thrombus in the fistula within several minutes. Follow-up angiography is then performed with additional angioplasty as necessary of either the arterial or venous limbs. The vascular access sheaths are compatible with dialysis tubing and can be left in place for immediate dialysis. The lytic procedure can be completed with-in one hour. In this fashion, the interventionalist can complete the procedure in a single sitting without having to move the patient either into another area for short-term lytic infusion or admit the patient to the hospital for overnight lytic infusion. Both of these are impediments to more widespread use of lytic therapy for revascularization of thrombosed fistulas. The simplification of the revascularization procedure fits with the trend toward surveillance and maintenance of dialysis fistulas by repeat outpatient procedures such as lytic therapy or angioplasty. Renal medicine physicians who are largely responsible for the management of dialysis patients find it convenient to schedule patients for this procedure since they can, in general, be treated on a same day outpatient basis without inconveniencing the existing dialysis schedule.

In our practice, this has become the routine standard of care for management of thrombosed dialysis fistulas. Patients can be treated between dialysis sessions without scheduling disruption. In our practice, virtually all dialysis patients with thrombosed access are managed by outpatient accelerated thrombolysis and angioplasty.

References

1. Cragg AH, Smith TP, Corson J, Nakagawa N, Castaneda F, Kresowik T, Sharp J, Shamma A, Berbaum KS. Two urokinase dose regimens in native arterial and graft occlusions: Initial results of a prospective, randomized clinical trial, *Radiology*. 1991;178:681-686.
2. Cragg AH. Lower extremity deep venous thrombolysis: A new approach to obtaining access, *JVIR*. 1996;7:283-288.
3. Gaylord GM, Taber TE. Long-term hemodialysis access salvage: Problems and challenges for nephrologists and interventional radiologists, *JVIR*. 1993;4:103-107.
4. Brunner MC, Matalon TAS, Patel SK, McDonald V, Jensik SC. Ultrarapid Urokinase in hemodialysis access occlusion, *JVIR*. 1991;2:503-506.
5. Young AT, Hunter DW, Castenada-Zuniga WR. Thrombosed synthetic hemodialysis access fistulas: Failure of fibrinolytic therapy, *Radiology*. 1985;154:639-642.
6. Ehrman KO, Gaylord GM. Thrombolytic therapy for occluded dialysis access grafts, *Semin Intervent Radiol*.1992;9:190-194.
7. Davis GB, Dowd CF, Bookstein JJ, Maroney TP, Lang EV, Halsaz N. Thrombosed dialysis grafts: Efficacy of intrathrombic deposition of concentrated Urokinase, clot maceration, and angioplasty, *AJR*. 1987;149:177-181.
8. Valji K, Bookstein JJ, Roberts AC, Davis GB. Pharmaco-mechanical thrombolysis and angioplasty in the management of clotted hemodialysis grafts: Early and late clinical results. *Radiology*. 1991;178:243-247.
9. Trerotola SO, Lund GB, Scheel PJ Jr., Savader SJ, Venbrux AC, Osterman, Jr AC. Thrombosed dialysis access grafts: Percutaneous mechanical declotting without Urokinase. *Radiology*. 1994;191: 721-726.
10. Dolmatch BL, Gray RJ, Horton KM. Will iatrogenic pulmonary embolization be our pulmonary embarrassment? *Radiology*. 1994; 191:615-617.
11. Castenada F, et al. (personal communication).

VENOUS ANGIOPLASTY AND STENTING

Andrew H. Cragg, MD
Fairview University Medical Center
Minneapolis, Minnesota, USA

Intraluminal stents have demonstrated their utility as adjuncts to angioplasty for the treatment of chronic arterial occlusive disease. Their application to the venous circulation has been more limited. We and others have experience with the use of intraluminal stents in a variety of venous applications. These include management of failed angioplasty of the venous outflow in dialysis access fistulas, treatment of superior vena cava syndrome and treatment of chronic pelvic venous occlusion.

Stenting in Conjunction with Dialysis Access Fistula Salvage
Interventional revascularization of the thrombosed dialysis fistula is now a common procedure. Thrombosis or dysfunction is usually due to obstruction of the venous outflow near the venous anastamosis. Regardless of whether a surgical revision or interventional salvage of the thrombosed fistula is undertaken, both techniques exhibit a high recurrence rate in large part related to restenosis of the treated venous outflow segment. In our experience, intraluminal stents have a limited role to play in the salvage of access fistulas. Stents placed in the venous outflow after failed angioplasty can act as a bridge to revision if this cannot be accomplished immediately or if the patient requires immediate dialysis. Stents do not, however, appear to limit restenosis associated with angioplasty[1] and have demonstrated that patency is similar to standard angioplasty.[1,2] At this time, therefore, there does not appear to be a role for primary stenting as a means to prevent restenosis. Failure of stents in the forearm appears to be due to a combination of the relatively hostile turbulent flow environment and the smaller caliber of stents in this location.

Superior Vena Cava Syndrome

We have anecdotal experience with the use of intraluminal stents for treatment of superior vena cava syndrome in patients with malignant SVC obstruction. SVC syndrome is a disturbing symptom complex which often occurs in patients with terminal malignancy. In this situation, placement of even relatively smaller caliber stents in the diameter range 8-12 mm[2,3] usually results in rapid defervescence of the clinical manifestations of SVC syndrome. Patients are quite gratified by this relatively simple technique and stent patency has not generally been an issue because of the limited life expectancy of these patients. For patients with benign obstruction of the superior vena cava, stents may also have a role, however, in this situation adequate caliber is necessary to limit the effects of restenosis. Careful attention to technique is necessary to minimize the important complication of stent misplacement or migration.

Pelvic Venous Stenting

In conjunction with our developing experience with lysis of deep venous thrombosis we have identified a subgroup of patients who appear to benefit from iliac stenting. These are the patients with chronic obstruction of the left iliac vein (May-Thurner Syndrome) who develop acute deep venous thrombosis. Often these are young patients who are active and otherwise healthy. After lytic therapy is accomplished to treat the thrombosis, an underlying stenosis of the common iliac vein is usually uncovered. This can be either a focal stenosis at the confluence of the iliac vein and vena cava or a chronic obstruction of the entire common iliac vein with collateral outflow through the internal iliac vein. These patients do not respond to simple balloon angioplasty even though the initial result may appear favorable. In our experience these patients inevitably rethrombose unless a stent is placed. In this situation we try to place as large a stent as possible (12-16 mm diameter). Patients are maintained on anticoagulation for six months after stent placement.

Other causes of chronic venous occlusion including radiation stricture, post-operative stricture or external compression may also respond to intraluminal stenting.[4] In general, the tenants of successful venous stenting are constant regardless of the location. Best results can be expected when the following conditions are met: 1) larger stents, 2) shorter lesions, 3) better inflow, 4) proper anticoagulation.

References

1. Gray RJ, Horton KM, Dolmatch BL, Rundback JH, Anaise D, Aquino AO, Currier CB, Light JA, Sasaki TM. Use of Wallstents for hemodialysis access-related venous stenoses and occlusions untreatable with balloon angioplasty, *Radiology*. 1995;195(2):479-484.
2. Ferro C, Perona F, Barile A, Borrelli M, Cianni R, Ambrogi C. Metallic stents for treatment of superior vena cava syndrome: Results in 26 patients, *CVIR*. 1996; 19(2):S43.
3. Oudkerk M, Kuijpers TJA, Borel Rinkes IHM, Brutel de la Riviere G, Wiggers T. Animal study for treatment of surgical induced caval stenosis with extra large Palmaz stents, *CVIR*. 1996;19(2):S43.
4. Nazarian GK, Bjarnason H, Dietz CA Jr., Anderson Bernadas C, Hunter DW. Iliofemoral venous stenoses: Effectiveness of treatment with metallic endovascular stents, *Radiology*. 1996;200:193-199.

SELECTIVE THROMBECTOMY FOR TREATMENT OF ILIOFEMORAL DVT

Bo Eklof MD, PhD
Straub Clinic & Hospital
Honolulu, Hawaii, USA

There are data that indicate that early and quick removal of an acute venous thrombus may prevent the destruction of the venous wall and valve, i.e., stop the progress into the post-thrombotic syndrome (PTS).

We, therefore, recommend an aggressive treatment with rapid removal of the occluding thrombus in active patients with acute iliofemoral deep venous thrombosis (DVT).

The first line of treatment should be catheter-directed intrathrombus thrombolysis with or without adjunct procedures such as angioplasty and stenting. When there are contraindications or failure of thrombolysis, thrombectomy (TE) with a temporary arteriovenous fistula (AVF) is the alternative. Both interventions will be followed by anticoagulation. These aggressive interventions are not justified in chronically ill, bedridden, high-risk, or aged patients, or those with serious intercurrent disease and/or limited life expectancy. In this group of patients these interventions can only be justified for limb salvage in phlegmasia cerulea dolens where conservative treatment does not prevent the development of an acute compartment syndrome with venous gangrene.

THROMBECTOMY

The first TE for iliofemoral venous thrombosis (IFVT) was per-

formed by Lawen in Germany in 1937. Surgery today is performed under intubation anesthesia. Ten cm water PEEP is added during manipulation of the thrombus to prevent perioperative PE. The involved leg and abdomen are prepared. A longitudinal incision is made in the groin to expose the long saphenous vein (LSV), which is followed to its confluence with the common femoral vein (CFV) which is dissected up to the inguinal ligament. The superficial femoral artery 3-4 cm below the femoral bifurcation is prepared for construction of the AVF. Further dissection depends upon the etiology of the IFVT. In primary IFVT with subsequent distal progression of the thrombus, a longitudinal venotomy is made in the CFV and a venous Fogarty TE catheter is passed through the thrombus into the IVC. The balloon is inflated and repeated exercises with the Fogarty catheter are performed until no more thrombotic material is extracted. With the balloon inflated in the common iliac vein a suction catheter is introduced to the level of the internal iliac vein to evacuate thrombi from this vein. Backflow is not a reliable sign of clearance since a proximal valve in the external iliac vein may be present in 25% of cases preventing retrograde flow in a cleared vein. On the other hand, backflow can be excellent from the internal iliac vein and its tributaries despite a remaining occlusion of the common iliac vein. Therefore, an intraoperative completion venogram is mandatory. An alternative is the use of an angioscope which enables removal of residual thrombus material under direct vision. The distal thrombus in the leg is removed by manual massage of the leg starting at the foot. The Fogarty catheter can sometimes be gently advanced in retrograde fashion. The aim is to remove all fresh thrombi from the leg. In IFVT secondary to ascending thrombosis from the calf, the thrombus in the superficial femoral vein (SFV) is often old and adherent to the venous wall and we have already lost the battle of the valves. The objective is to restore patency and preserve valvular function. If iliac patency is established but the thrombus in the femoral vein is too old to remove, then it is preferable to ligate the superficial femoral vein. Recanalization will otherwise lead to valvular incompetence and subsequent reflux. If normal flow in the SFV cannot be re-established, we recommend extending the incision distally and exploring the orifices of the deep femoral branches. These are isolated and venous flow is restored with a small Fogarty catheter. The SFV is ligated. The venotomy is closed with continuous suture and an AVF created using the LSV, anastomosing it end-to-side to the superficial femoral artery. An intraoperative venogram is performed through a catheter inserted in a branch of the AVF. After a satisfactory completion venogram the wound is closed in layers without drainage. If there are signs of iliac vein compression which can occur in about 50% of left-sided IFVT, we recommend intraoperative angioplasty and stenting.

Heparin is continued at least 5 days postoperatively, and warfarin is started the first postop day and continued routinely for 6 months. The patient is ambulant the day after the operation wearing a compression stocking. The patient is usually discharged on the tenth postop day to return after 6 weeks for closure of the fistula. The objectives of a temporary AVF are to increase blood flow in the thrombectomized segment to prevent immediate rethrombosis, to allow time for healing of the endothelium, and to promote development of collaterals in case of incomplete clearance or immediate rethrombosis of the iliac segment. A new percutaneous technique for fistula closure was developed by Endrys in Kuwait. Through a puncture of the femoral artery on the opposite surgically untouched side, a catheter is inserted and positioned at the fistula level. Prior to inflation and release of the balloon or coil, an arteriovenogram can be performed to evaluate the patency of the iliac and caval veins, which is of prognostic value. More than 10% of patients have been shown to have remaining significant stenosis of the iliac vein despite initial successful surgery. A transvenous percutaneous angioplasty with stenting can be performed under the protection of the AVF, which is closed 4 weeks later after repeat arterio-venogram.

"LATE" RESULTS

There are few studies on "long-term" results after TE with AVF. There are 8 studies of clinical results in 521 patients with more than 2 years follow-up where "clinical success" is claimed in 62%.[1] There are 5 studies on iliac vein patency in 247 patients with more than 2 years follow-up showing 82% patency (range 77-88%).[1] There are 5 studies on femoro-popliteal valvular competence in 259 patients with more than 2 years follow-up showing 60% competency (range 36-84%).[1] In the prospective, randomized study from Sweden we found a highly significant difference in the number of asymptomatic patients after 6 months, with 42% in the surgical group versus 7% in the conservatively treated group.[2] At 5 years, 37% of the operated patients were asymptomatic com-pared with 18% in the conservative group.[3] At 10 years, 54% in the surgical group were basically asymptomatic (class 0-2 new CEAP classification) compared with 23% in the conservative group, however, not a significant difference.[4] Iliac vein patency at 6 months was 76% in the surgical group compared with 35% in the conservative group, demonstrated by venography.[2] This significant difference was upheld after 5 and 10 years with 77% and 77% patency in the surgical group, respectively, versus 30% and 47% in the conservative group, respectively.[3,4] Femoro-popliteal valvular competence at 6 months was 52% in the surgical group compared with 26% in the conservatively treated group, using descending venography with Valsalva, a significant difference.[2] After 5 years, the patients who underwent TE had significantly lower ambulatory venous pressures, improved venous emptying as shown by plethysmography, and a better calf pump function with less reflux as measured by foot volumetry. Combining the results of all functional tests, 36% of the surgical patients had normal venous function compared with 11% of the conservatively treated group. These differences were not statistically significant due to loss of patients.[3] At 10 years, using duplex scanning, popliteal reflux was found in 32% of the surgical group compared with 67% of the conservative group. Six patients who had a successful TE 10 years before without obstruction of the iliac vein at the time of surgery, were all asymptomatic with patent iliac veins, and 50% had competent popliteal veins.[4] Successful TE seems to be beneficial in the long term.

The treatment of acute iliofemoral DVT should aim at:

- prevention of fatal PE;
- decrease of pain and swelling of the involved leg, trying to stop the development of phlegmasia cerulea dolens, and venous gangrene;
- prevention of the disabling post-thrombotic syndrome by early removal of the blood clot avoiding proximal venous obstruction and preserving normal, functioning valves preventing reflux.

The first choice to accomplish early and quick removal of the thrombus is catheter-directed intra-thrombus thrombolysis. When there are contraindications or failure of thrombolysis, thrombectomy with a temporary AVF is a valid alternative.

References

1. Eklof B, Kistner RL. Is there a role for thrombectomy in iliofemoral venous thrombosis? *Sem Vasc Surg.* 1996;9:34-45.
2. Plate G, Einarsson E, Ohlin P, et al. Thrombectomy with temporary arteriovenous fistula: The treatment of choice in acute iliofemoral venous thrombosis, *J Vasc Surg.* 1984;1:867-876.
3. Plate G, Akesson H, Einarsson E, et al. Long-term results of venous thrombectomy combined with a temporary arteriovenous fistula, *Eur J Vasc Surg.* 1990;4:483-489.
4. Plate G, Eklof B, Norgren L, et al. Venous thrombectomy for iliofemoral vein thrombosis. Ten-year results of a prospective randomized study, *Eur J Vasc Endovasc Surg.* 1997;14:367-374.

ALGORITHMS FOR THE TREATMENT OF ACUTE DVT

Anthony J. Comerota, MD, FACS
Temple University School of Medicine
Philadelphia, Pennsylvania, USA

Figure 1

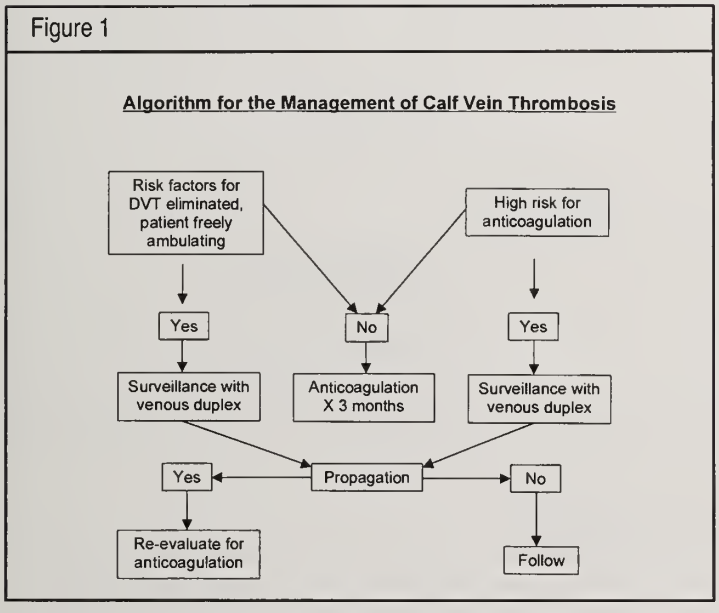


Figure 2

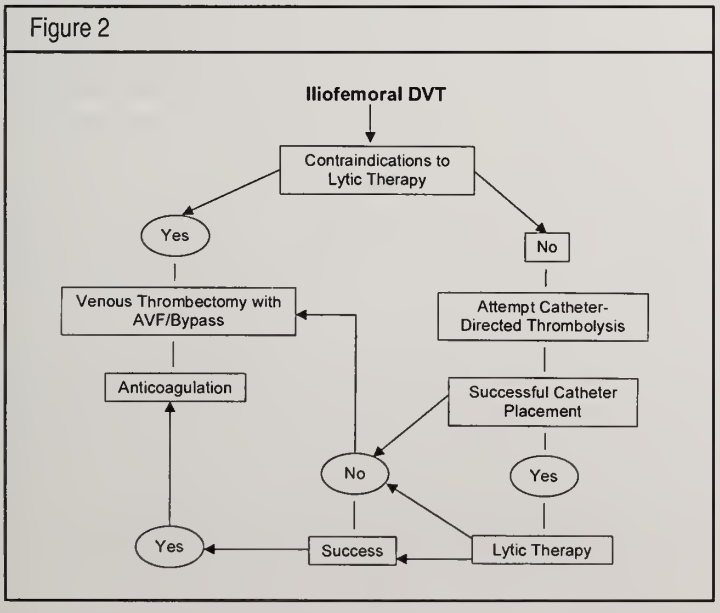


Figure 3

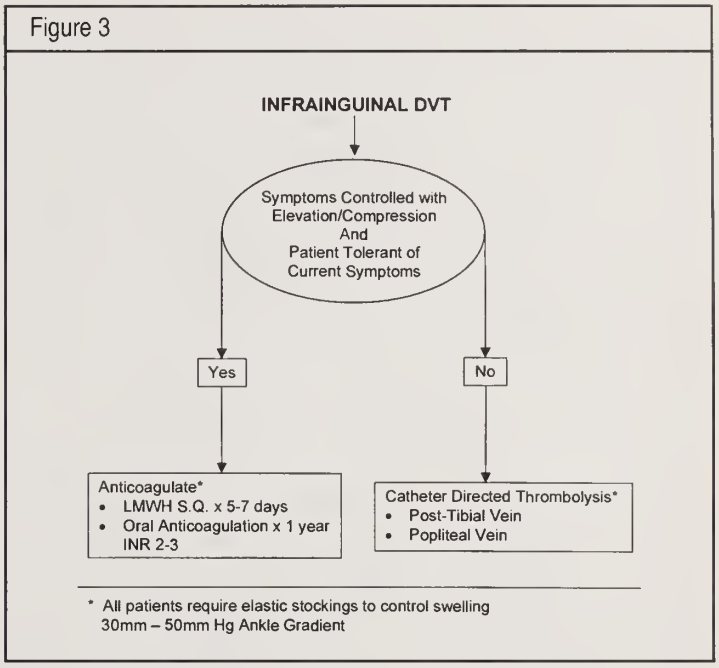


Figure 4

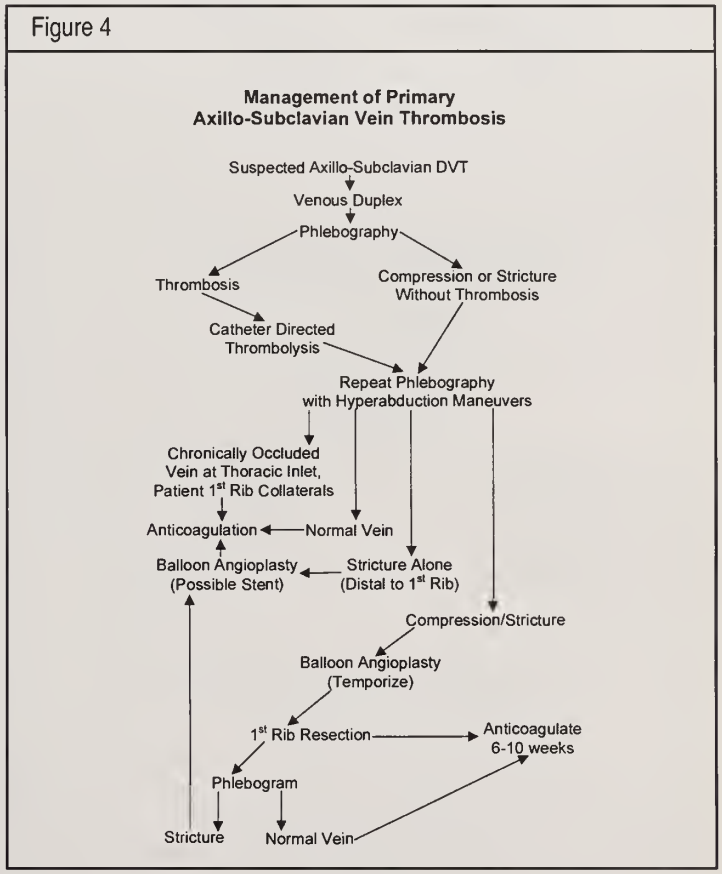


Figure 5

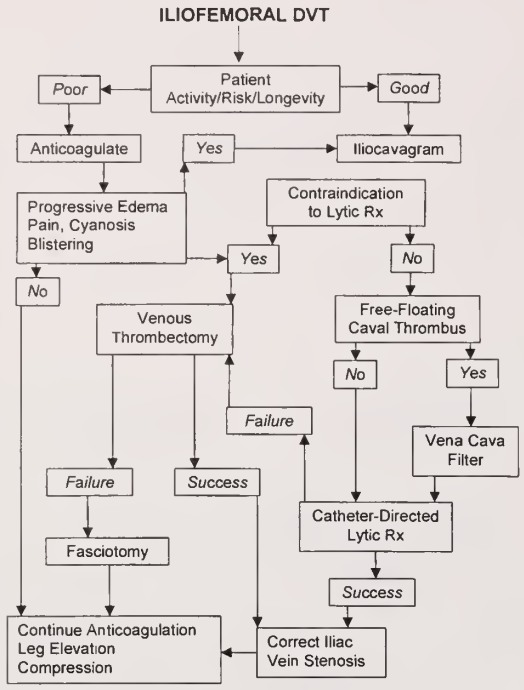


Figure 6

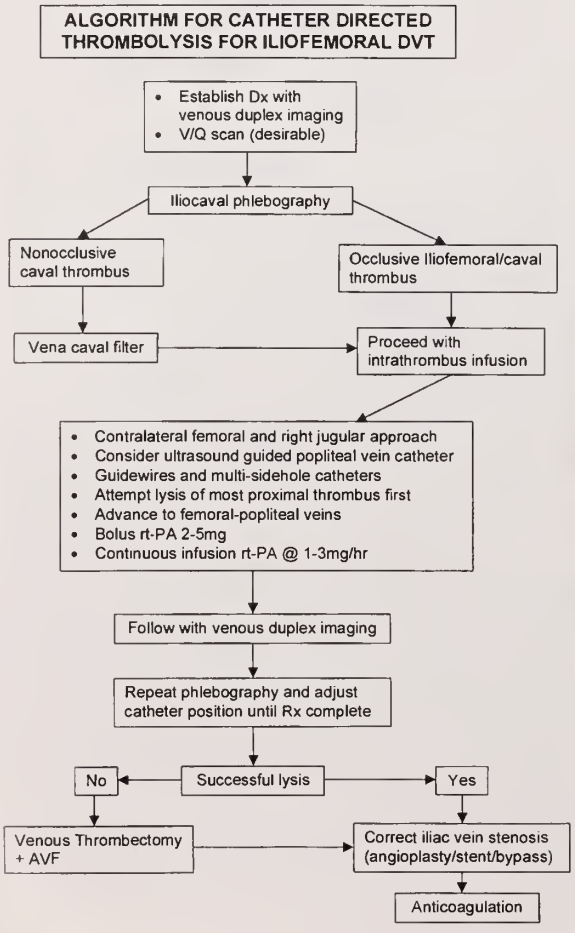
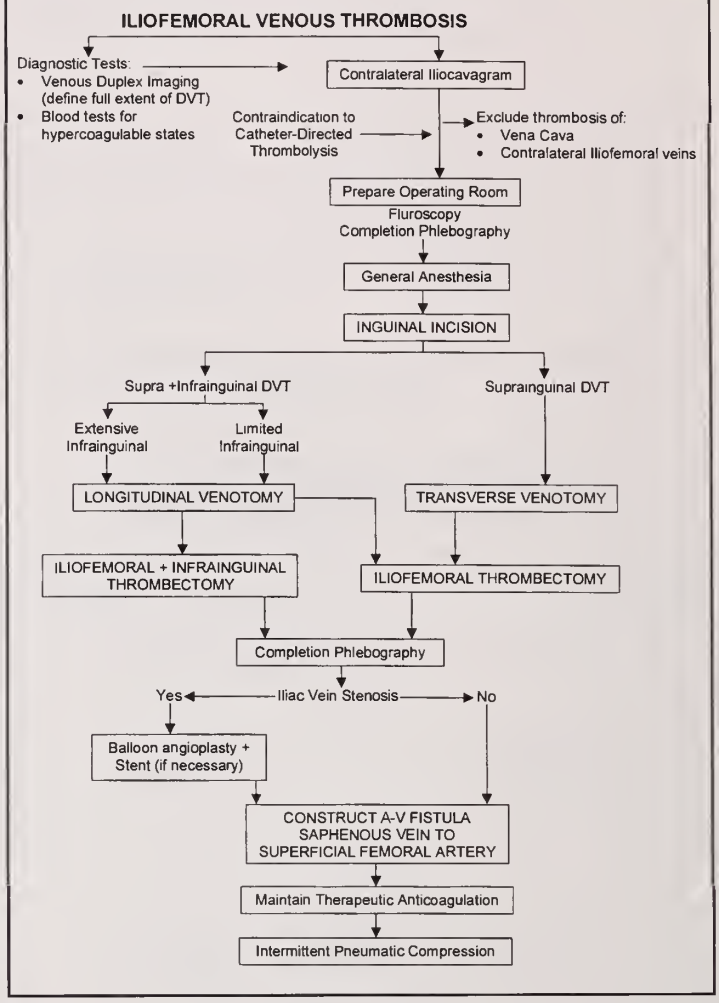


Figure 7



DISCUSSION

DR. COMEROTA: We're now going to move to the most extensive form of DVT. Observations from the venous registry and the observations from the quality-of-life outcomes study can serve as a reasonably solid hypothesis that eliminating the clot in the iliofemoral venous system is helpful in our patients and will lead to a more favorable outcome compared to standard anticoagulation. Obviously that needs to be tested in prospective randomized trials. I'd like to invite comments from our expert panelists.

DR. WAKEFIELD: My comment would revolve around the fact that what I think we really need to know is who, when you lyse, you can clear because even in the patients in the registry who had symptoms less than ten days, had no history of prior DVT, and had the best access, the complete lysis rate was only 65 percent. You have shown and others have shown from the data from the '70s that it is in those patients with complete lysis who had the best results. If you don't attain complete lysis, you don't have as good a result. Thus, it seems to me that what we really need is to be able to identify the patient when we see him or her who we expect is going to be able to be lysed completely. That's the person, if you're going to lyse somebody, that you should attempt. If you can't expect that you are going to have complete clearance, then perhaps you should not even

begin lysis.

DR. COMEROTA: What are your thoughts, Andy? Do you agree? If you can't get rid of all the clot, should you not even try? Isn't getting rid of 50 or 75 percent of the clot better than leaving 100 percent of it?

DR. CRAGG: That's not a yes/no answer. I think some of these patients may have had complete lysis, for instance, of their iliac system and incomplete lysis of their femoral system, and they would automatically go into that Grade II category. I think in terms of swelling, the key item is getting their iliac system open. It sure would be nice to predict who's not going to do well. I sure can't do it ahead of time. I've got some gut feel after I've started, and that's if you're not progressing in 12 hours, you're probably not going to be successful. We tend to slog on on these things for two to three days trying to make a little progress, but I think you're right in that sense, that what we might learn is when to throw in the towel, not who to pick.

DR. THORPE: Sometimes when the patient comes to you and they've had seven days of symptoms or even two days of symptoms, when you do a careful history you find out that actually their symptoms started two or three weeks before. So there is layering of thrombus, the oldest thrombus, then some more recent thrombus where they get that critical mass that makes them swell and hurt and brings them into the doctor's office. It sort of deludes us to think it's a relatively acute presentation. By the time they finally figure it out, the thrombus isn't all that brand new. So when we start the lytic therapy, even with catheter directed technique, we get rid of the brand new clot very quickly. The older clot might take a little bit longer, and in the venous registry there was a learning curve for a lot of people. They weren't all experienced with catheters, and sometimes therapy could have gone a little longer as opposed to what Andy is saying, and they might have gotten a better result. Would that make a difference in the long run? I don't think we know.

DR. COMEROTA: Patricia, what do you tell your patients regarding intracranial hemorrhage? Many of these patients are quite young and it's an identified risk. What do you address this issue?

DR. THORPE: Well, I think it's a relatively small risk in the younger patients because when you look at the data and the complications in the literature the risk factor that predicts --

DR. COMEROTA: Do you even mention it to them?

DR. THORPE: Oh, yes, I do, because the major risk factor is diastolic hypertension, and this is a young group of people who don't have hypertension problems yet. I also screen for any seizure disorder because I've looked at a number of cases that have gone to court for intracranial bleeding. Seizure disorder, even remote seizure disorder, seems to be related in a number of cases that have had bad outcomes in younger patients, and we don't know enough. There are not that many patients --

DR. COMEROTA: So you won't treat anyone who's had a prior seizure?

DR. THORPE: To tell you the truth, I shy away from anybody who's had a seizure disorder.

DR. CRAGG: It is worth discussing the use of lytics and intracranial hemorrhage. I always tell them it's a very remote possibility and it is.

DR. COMEROTA: Do you not treat patients with prior seizure disorders?

DR. CRAGG: Yes, I would treat those patients.

DR. RUTHERFORD: I have a comment that relates to something earlier in the discussion. I wish to voice a concern over the impact of the data Russell has presented and their recommendations made from it. You state that 80 percent of patients can be appropriately treated on an ambulatory basis with low molecular weight heparin regardless of the anatomic level of DVT, although the data was only equivalent for the upper levels, and also that treatment brings with it major cost savings. Based on this there are sweeping recommendations that all patients, or all but certain selected patients, be treated with low molecular weight heparin on an outpatient basis, but that also means that those patients will not be exposed to a decision of whether there should be an intervention that is thrombolysis or thrombectomy to decrease the eventual risk of post-phlebitic syndrome. That recommendation has been made with a lack of any data on post-thrombotic sequelae. So I would like some information on the study that you said you're going to have the data on by December 30th, on outcome in regard to post-thrombotic sequelae. You mentioned 400 patients, and I'd like to know whether those patients are divided into control and treatment groups of 200 each, which would yield quite small numbers, considering all the big numbers you've been showing us for other outcome criteria. Second what are your outcome criteria? Are they clinical, for if they're clinical, you are going to have a long enough term follow-up to show a difference in criteria such as incidence of ulcers and stasis dermatitis? We know that requires more than two years to begin to be valid, or are you going to use surrogates such as duplex studies showing patency and lack of reflux. So I'm very interested in the protocol and outcome criteria of this study that we're going to hear about around the time of the millennium. In addition, are you going to project your cost analysis to include the cost of the post-phlebitic syndrome because I think that while short-term cost may show a savings, if you're not preventing the post-phlebitic syndrome, all those cost savings will go down the drain. How much can you preview this study for us, Russell.

DR. HULL: It's a randomized trial looking at home treatment with low molecular weight heparin for three months or low molecular weight heparin for three days versus Coumadin. Warfarin sodium has the same frailties as heparin. You have to monitor it. If you get outside the therapeutic range you'll have recurrences, and you'll have bleeding if you go above it. The key measure apart from the effect of safety is the quality of life measure which is a general one and a specific questionnaire for the post-phlebitic syndrome. So we'll be able to tell you exactly how many of these people have the syndrome. Now, recently a couple of papers have come up, and professor Partsch may wish to comment on this because now European data are pointing out that if you ambulate the person early, the thrombotic mass is less and therefore the post-phlebitic syndrome may be less. So one of the little intriguing things is that with the low molecular weight heparin programs, the patients can more readily ambulate even if they're in the hospital. Another thing I'd throw into the post-phlebitic mix is ambulation, and I'm sitting here feeling extremely uneasy about catheter direct thrombolysis because of intracranial bleeding and trying to reconcile who we see come through Calgary. We have a captured population. Because we have one board that runs the health care system in the hall of Calgary, we can acquire everybody who has DVT. The number of

phlegmasias we're seeing is very, very small. Just to offer a cautionary comment, because I'm on the front line half the year, I see a lot of these patients in follow-up, and one of the embarrassing things walking into a patient's room into the clinic is I can't tell which leg is involved in these programs. I'm not going to offer which group, but I have to look at the records. So the unease I have is that we've gotten much better at giving aggressive antithrombotic therapy. I said antithrombotic, not anticoagulant, because anticoagulant we would like to remove and with low molecular weight heparin we have in a sense that we don't have to anticoagulate monitor. The intracranial bleeding rate is real. I'm a systems specialist half the time, the other half of the time a hematologist, and so I think a trial has to be done. Is Abbott going to sponsor the trial?

DR. COMEROTA: I doubt it at the present time because urokinase has been taken off the market in the United States. Gene has a comment for you.

DR. STRANDNESS: We have the data on valve function from the registry. Mark Meissner is preparing the manuscript for publication. I can't tell you the final details, but it appears that if you achieve complete patency, (removal of the thrombus), it is possible to preserve competence of the venous valve. I think that's extremely important. Getting back to the issue, if you remove obstruction you preserve valve function, clinically you will do better. It is important to have open veins and good functioning valves. So I think from that standpoint, if nonlytic therapy doesn't assist in some way to promote thrombus lysis, it will fall short. The randomized trial with thrombolysis was about to be started, Abbott pulled out of the field. Tony, do you know if there's a randomized trial?

DR. COMEROTA: I'm not aware of any, no.

DR. STRANDNESS: So this question may not be answered unfortunately.

DR. HULL: I think it will for two reasons if. We go through the history of medicine, we now recognize that you need to give aggressive antithrombotic therapy, and that used to be heparin protocol. It's now some of the low molecular weight heparin regimens. That allows early ambulation, and some of the low molecular weight heparin regimes may also be safer intrinsically than unfractionated heparin. I'm the glass that's half full sort of personality. So I think with the improvement in antithrombotic therapy that we've achieved and the increased safety margin, that one of the highest priorities now is the lysis trial to resolve the issue because there's no question that there are patients with very severe thrombosis who may do well for a couple of years who need limb salvage. On the other hand, for the average patient the intracranial bleed is very real, and so if industry won't sponsor it, it needs to be in an NIH trial, but it needs to be done. All you hear me say is we need the trial to find out who the patients are who require it.

DR. COMEROTA: Russell, what you're suggesting is similar to what Hugo Partsch has shown us regarding the benefits of ambulation and compression in patients with DVT. Are you using compression? Should we be adding pneumatic compression to the treatment of acute DVT? What do you think about that, Hugo? Will that further help to resolve the clot?

DR. PARTSCH: I'm hesitating to recommend pneumatic compression because this would be done in the supine position, and you can't compare this with active ambulation in patients.

DR. COMEROTA: Well, they could sit up. They could sit and have the legs hanging down in a pendent position. That may actually increase venous velocity if you did that.

DR. PARTSCH: It's a contraindication if you read the text of the manufacturers.

DR. COMEROTA: But I'm asking you what you're thinking.

DR. PARTSCH: In principle if you want to improve flow velocity in patients who are not completely mobile, who are not able to walk two kilometers per day, in very old patients, for instance, such devices could be considered to be used as an adjunctive therapy. One point which has not been mentioned, is that there are some indirect data concerning an anti-inflammatory effect of compression. We heard about the inflammatory changes in deep vein thrombosis and that low molecular weight heparin would be beneficial due to its anti-inflammatory effect. There are new data present which show that compression and also pneumatic compression, is able to exert an anti-inflammatory effect which also would be important, especially in the first days of treatment, additionally to the immediate effect of low-molecular-weight heparin.

DR. ABU-BAKER: I'd like to ask two questions: The first, in selective thrombectomy for the treatment of acute iliofemoral DVT, do you know a non-aggressive method which is ambulatory, aesthetic, functional, and without risk of a pulmonary embolism? The second question is, is there any recommendation of the position of the patient who had acute iliofemoral DVT on the operative table in order to prevent pulmonary emboli?

DR. EKLOF: I can answer the second part of your question. We have them supine. I don't think it matters too much as we put PEEP pressure on the ventilator during the procedure. Your first question again, Mohammad, was?

DR. ABU-BAKER: The first question is in selective thrombectomy for the treatment of acute iliofemoral DVT do you know, of any non-aggressive method which is ambulatory, aesthetic, functional, and without risk of a pulmonary embolism?

DR. EKLOF: You are forcing me into the battle here with Russell Hull about low molecular weight heparin which is aesthetic. I am very worried about this discussion about low molecular weight heparin. I think we are depriving and excluding patients from an efficient treatment that probably at least will prevent the post-thrombotic syndrome. If you're going to start to treat every patient with iliofemoral DVT with low molecular weight heparin and send them home, I think this is a big step backwards. I think if you believe in the concept of early removal of the thrombus, we won't do that with heparin. We know that. So I think we need more information. We need a prospective study comparing catheter-directed thrombolysis and thrombectomy with anticoagulation.

DR. COMEROTA: I also believe that a major problem leading to the confusion and many of the differences of opinion is that the patients who are at risk of the more severe post-thrombotic syndrome are likely to have more extensive DVT's, with multiple segments involved. The majority of the patients I see with DVT are treated as an outpatient with low molecular weight heparin converted to Coumadin. They are predominantly infrainguinal, they're focal, and much different than the patient with the phlegmasia cerulea dolens who will be incapacitated. Active patients face major disability if the venous system is not reopened. Unfortunately, for the most part that stratification is not available in the current literature. That speaks to issues that are being addressed by Dr. Rutherford,

Dr. Kistner, and others in terms of appropriate classification of patients and stratifying them up front, so that we can all begin to compare similar patients and risks. I think that I have to agree quite enthusiastically with Bo's answer. Albeit, that those patients that are going to benefit the most are a relatively small group of patients. You may see more of them here in Hawaii than we would see in Philadelphia just by virtue of what it takes to get here.

DR. STRANDNESS: I'm really concerned about one thing, Dr. Hull. At least in the United States, and I can't comment on Canada, I don't know of an internist or hematologist who has ever followed a patient with deep venous thrombosis in the long term. They never end up in an internist's office. They never end up in the hematologist's office. They end up in the hands of a surgeon to look at the complications of this disease. Furthermore, I think in all the wonderful work that you've talked about with regard to all these trials, you've only focused really on one issue, and that's pulmonary embolism and you know that. All those randomized trials have looked at comparable forms of therapy without looking at the leg. You really haven't done that, and I don't think a quality of life issue here is going to answer that question unless attention is directed to where the disease starts and what happens to it in the long term.

DR. HULL: We actually have used surveillance and we do follow long term. We have IPG data that we haven't published which I guess we should and we shall given that prompt, but I'm not a hematologist. I'm actually a systems specialist. So I do follow patients, and quite a few of our colleagues do. So I'll draw that boundary south of Canada and say that in Canada we do. The problem with the post-thrombotic syndrome is the long-term nature of the follow-up, and it's not a lack of interest or prospective. It's a lack of funding. So if you look at the studies that you saw today, that involves an enormous amount of resource, human, kind, wise, people. I don't think I mentioned the dollars, but the dollars are way beyond $200 million just for some of those trials that were done to get there. So the reason we're sitting here having -- increasingly my seat is getting hot, but the reason my seat is getting hot is less lack of desire or less lack of willingness to look at the issues. It's a lack of data. So I've taken the position historically for the last 26 years that we need the best trials to show the evidence, and we as a group, including the people here, have been successful doing that. It's time to do that for thrombolysis. It's that simple.

DR. RAJU: I hope I'm not piling on. I just wanted to piggyback on Dr. Strandness and the question directed towards Dr. Hull. Your patient population -- you set a very high standard and it's a source of admiration for me, but at the same time I do want to ask you, you have all these wonderful trials in a well-defined population in Calgary, and the low molecular weight heparin trials in your institution has been going on for at least five or six years. Retrospectively what is the incidence of post-thrombotic syndrome in that population? You have the records.

DR. HULL: We need the funding to do the work. So historically the funding agencies have not been enthusiastic about doing that because they're actually quite expensive trials. You need a team of people to do it. There are actually people in this room who are discussing the possibility of doing such trials, and indeed there may be interest, but the reason that we're talking philosophy rather than evidence-based medicine is not a lack of enthusiasm. It reflects the difficulty with the long-term nature of the trial. To give you some idea of the problems, the average Canadian peer review grant goes at the most for three years. So we run into terrible problems when we want the ten-year follow-up. So there are three problems: One is the long-term nature of the disease; the other is the acquisition of the patients and the cost that's involved is huge; and the third is total lack of interest by the funding agencies to do this up until now, but it might change. What we've done is we've cut away at the frontier. The frontier is now closing in on thrombolysis and the post-thrombotic syndrome. I think that's very clear. So that's why I'm half glass full. I think it will happen.

DR. RAJU: The second question is that I heard you to say early ambulation is likely to prevent post-thrombotic syndrome. Is that based on evidence-based medicine or is it just a hope?

DR. HULL: Well, there are a number of reasons to say that, and I'll pass the ball to Professor Partsch who directly has observed that, but if you go to low molecular weight heparin, you get a reduction in thrombotic mass which I didn't mention strongly, but it's there in all of the repeat venogram data. I alluded to it. So there is a biological or imaging reason why a low molecular weight heparin might be better than unfractionated heparin for the post-thrombotic syndrome. So yes, there is going to early ambulation.

DR. PARTSCH: Coming back to your first question, there are data in the literature showing that after conservative treatment the rate of post-thrombotic syndrome and of ulceration is much lower than we saw in some slides today. There was one slide from Tony Comerota showing 50 percent of venous ulceration ten years after deep vein thrombosis. There is for instance one study published in Circulation, by Franzeck from Zurich, Switzerland, looking at cohorts of proximal DVT patients 13 years later. With consequent compression the rate of post-thrombotic syndrome was extremely low. In average the frequency of ulceration after five to ten years is five percent, as it was shown in a large study from Leo Widmer, for instance. So I think there is some overestimation of the complication of severe post-thrombotic syndrome. When there is deep vein thrombosis and you treat it conservatively then the danger of pulmonary embolism is behind you, and the late outcome is obviously much more favorable than it was described until now. Concerning your second question if early ambulation, prevents post-thrombotic syndrome I must say that this is speculation. What we know is that effective early treatment is obviously very important. Russell Hull showed us very convincingly, that the rate of recurrent episodes of DVT can be decreased if in the first phase of early treatment with unfractionated heparin the range of a aPTT is prolonged to more than 1.5. If this could not be achieved the recurrence rate in the first months was much higher. From this it is my extrapolation that we should, not only rely on the anticoagulatory effect of heparin, but should also to try to improve the venous flow velocity as soon as possible. If you have a patient coming in walking, the soonest point of time to do that would be just to let him walk with compression and not to put him into bed for several days.

DR. RUTHERFORD: I think we need to concede that, given enough numbers, that anticoagulant therapy will show an improvement in the post-phlebitic syndrome. It is a matter of to what degree. That is it can be expected to the degree that anticoagulant therapy prevents propagation and to the degree it prevents recurrent DVT. We would expect that degree of improvement. Therefore, to make a proper comparison, we'd need a trial comparing anticoagulant

therapy with thrombolytic therapy, or at least a protocol of early clot removal, because I think we need to keep thrombectomy in our armamentarium because in patients with iliofemoral venous thrombosis, there are a lot of peri-partum cases, post operative cases, post-traumatic cases, and cases with other contraindications. So, if the patient deserves early clot removal and is reasonably healthy, thrombectomy should be included in the armamentarium. Now, if we do a trial I think we need to stratify the cases and include only iliofemoral venous thrombosis in relatively healthy, active people in whom the development of a post-phlebitic syndrome is a valid issue and not include all the patients including those who are elderly, with significant comorbidities or other factors in whom we wouldn't even consider as candidates for iliofemoral venous thrombectomy or thrombolysis.

DR. RAJU: Just a quick comment. Regarding the incidence of venous stasis ulceration two to four percent with LMWH, that has been true even for unfractionated heparin over the years; the real question is the incidence of pain and swelling, and that forms the bulk of disabling post-thrombotic syndrome.

DR. PARTSCH: There is one randomized controlled study from Amsterdam which has been mentioned today, and this group showed convincingly that after proximal deep vein thrombosis the rate of swelling and post-thrombotic syndrome, also of minor stages could be reduced to 50 percent, compared with a group of patients without compression.

DR. KISTNER: I direct my question to Gene Strandness and to Bob Rutherford. As we progress to prospective studies and we realize the importance of defining segmental distribution of disease in the chronic phase, do we also have or can we develop an equal classification of the acute disease? We should classify acute disease in a universal fashion just as we classify the chronic in order to make correct correlations later.

DR. COMEROTA: Is that possible, Gene?

DR. STRANDNESS: It should be. I don't see why it can't be.

DR. KISTNER: It would require standards for diagnosis.

DR. STRANDNESS: Sure, I think so, and I think the other point is -- Russell talked about it briefly. One of his points is that with low molecular weight heparin it may be possible to get a more rapid resolution of the thrombus load than you do with standard therapy. The other issue I wish you'd just briefly comment on relates to Coumadin therapy which is also very poorly done. The recurrence rate in our study looking at these patients in the long term on Coumadin is very high. So how are you going to get around that problem in the long term? That is another issue with regard to the long-term outcome after any form of therapy.

DR. COMEROTA: But that will be universal, Gene, no matter what therapy those patients have up front, whether it's lysis, whether it's thrombectomy, or whether it's anticoagulation. All of those patients deserve appropriately dosed and duration of oral anticoagulation.

DR. STRANDNESS: I don't disagree with that, but we've been talking about good versus bad with low molecular weight as compared to unfractionated heparin. In our experience long term Coumadin therapy is not well carried out.

DR. RUTHERFORD: To address another aspect of that, we need to have a scoring system based on the factors that are known to affect outcome of DVT in conducting these trials. As I will point out later, in my talk on Friday, Mark Meissner on the AVF adhoc committee on venous outcomes assessment has been working on this aspect, and he's developing a scoring system including identifiable factors for which there's evidence that they do affect DVT outcome. With such a scoring system, we can produce an even playing field, or equivalent groups, when we do trials or compare the results of different trials.

DR. TRIPATHI: I have two questions, one for Dr. Partsch. We learned during our residency teaching programs that the thrombus in the lumen of the vein gets stuck to the vein wall within about five to ten days, and compression of calf may extend the thrombus or fragment them. If your patients are walking into your clinic with calf vein DVT or popliteal femoral DVT, is compression necessary? Can't you leave them just on ambulation?

DR. COMEROTA: Where is that shown? That's a concern that permeates medicine and that's one reason why manufacturers say that we should not compress legs in patients with DVT. Where is it documented that compressing the leg with DVT causes P.E.? I've searched for it but I've not been able to find evidence for that concern.

DR. TRIPATHI: I'm sorry, but I haven't read it, but this is what was taught during our residency.

DR. COMEROTA: Of course. Then one needs to take it the next step. Why does that occur?

DR. TRIPATHI: That's exactly why I'm asking this question is because there needs to be a study to show --

DR. COMEROTA: No, you stated it as fact, and I wanted to make sure that the statement did not stand as fact.

DR. TRIPATHI: Sure. This is information given to us during our residency program, and that's what I'm stating.

DR. PARTSCH: I have presented initial data from a randomized controlled study comparing three groups of patients, one with bed rest without compression versus two groups of ambulation with compression. All these patients, had pulmonary lung scan studies in the initial stage and after nine days. There was no significant difference concerning new pulmonary embolism in these groups. It was never proved that compression increases the risk of pulmonary embolism.

DR. TRIPATHI: The other question is for Dr. Eklof. I suppose that the rationale for ligating the superficial femoral vein after iliofemoral thrombectomy is to prevent recurrence in that segment. In how many patients do you get recurrence of thrombosis in the femoropopliteal venous segment, after ligation of superficial femoral vein?

DR. EKLOF: I can't answer that question, but the rationale behind doing it, I learned from Bob Kistner with his long-term study of ligation of the superficial femoral vein. As long as you have the profunda vein patent and competent, the patients will have no sequela, but if you leave the thrombus in the superficial femoral vein it will recanalize with destruction of the valves and subsequent reflux which will lead to the post-thrombotic syndrome with all its severe sequelae.

DR. TRIPATHI: Why I asked you this question is that we are doing femoral venous thrombectomy without ligating the superficial femoral vein, and we get recurrent thrombosis in about 18 to 20 percent of our patients in the femoro-popliteal venous segment below thrombectomy site and that needs to be looked at.

AIR TRAVEL-RELATED VENOUS THROMBOEMBOLISM HAWAII VIEWS

Bo Eklof, MD, PhD
Straub Clinic & Hospital
Honolulu, Hawaii, USA
B. Arfvidsson, MD, PhD

Venous thromboembolism associated with extended quiet sitting has been known since World War II. Cramped sitting in air raid shelters for prolonged periods during the London Blitz was often followed by cases of PE, not infrequently fatal.

Homans in 1954, was the first who related deep venous thrombosis (DVT) to prolonged air travel. Later when intercontinental flights became more common during the 1960s the incidence probably increased and the problem drew more concern.

The most prominent case of air travel-related DVT was the late former President Richard M. Nixon. In 1974, the last year of his presidential term, he made a long trip to Europe, the Middle East, and the Soviet Union. Early during this trip he developed a DVT of his left leg. He was treated with anticoagulation but continued the trip with recurrent symptoms while in Egypt and Russia. After his resignation in August 1974, he had several serious recurrences and episodes of PE. Hospitalization for treatment prevented him from testifying in the Watergate trial. Despite anticoagulation the thrombus extended into the iliac vein. Surgical ligation of the iliac vein resulted in bleeding complication and shock. The President was in serious condition for several days before he was able to make a full recovery.

Because of the methodological difficulties to study the occurrence, very little is known about the incidence of air flight associated DVT and PE. A 1986 study from London Heathrow airport found that 18% of 61 sudden deaths among long-distance passengers were due to PE. This made PE the most common cause of such death, next to ischemic heart disease. A vast majority of patients develop symptoms during the first 24 hours after the start of the flight. In some cases the first symptoms occur in-flight.

"Virchow's Triad": (1) endothelial lesion, (2) venous stasis, and (3) hypercoagulability describes the basic pathophysiology of venous thrombosis. In the pressurized flight cabin a number of factors influence Virchow's variables. Immobilization, cramped coach position, low air pressure, relative hypoxia, low humidity, and dehydration constitute the most important cabin-related risk factors.

Among the patient-related risk factors, obesity is one of the most common. Chronic heart disease, hormone medication, diabetes mellitus, rheumatoid arthritis, malignancies, chronic renal failure, previous DVT, smoking, and recent trauma or surgery also increase the risk for DVT.

To be able to reduce the risk for flight-related DVT and PE, the traveler must be aware of the possible danger, and the airlines should be responsible for this information. Already with the flight ticket, basic information could be provided giving the travelers an opportunity to discuss with their physician what prophylactic measures should be taken, such as compression stockings. In flight, the general safety information could include advice on appropriate exercise and beverage intake during the flight. Also the airline magazines and in-flight videos could give such information. Further research is needed on the incidence of air travel-related thromboembolism but now, certain precautions that might reduce the risks should be taken.

LONDON VIEWS

Kevin Burnand, MD
St. Thomas' Hospital
London, United Kingdom

There are many anecdotal reports of thrombosis after prolonged air travel, but there have not been any prospective studies. The best study to date comes from the host institution, who showed that 17% of DVTs admitted to Hawaiian hospitals over a six-year period, followed a prolonged airline flight. Dehydration, prolonged immobility combined with flexed dependent limbs, all increased the risk of thrombosis in flight. It is not known if thrombophilia is an important independent risk factor. Airlines should be encouraged to allow prospective studies to be performed on different groups of passengers. We have proposed such a study looking at fibrin degradation products (d-dimer) on departure and arrival, carried out on British Airways customers on long haul flights. Duplex scanning and a thrombophilia screen would be offered to any passenger developing a significant rise in fibrin degradation products. British Airways is considering this proposal at present, but is nervous because of sensitivity that by allowing such a study, they would be recognizing that there is an increased risk of thrombosis during flight. The potential study will be discussed and other evidence reviewed.

VIENNA VIEWS

Hugo Partsch, MD
Wilhelminen Hospital
Vienna, Austria

INTRODUCTION

Long sitting, dehydration, and lowered oxygen pressure in the cabin are the most important triggering factors for air-travel thrombosis. However, many patients with DVT are seen in continental Europe also after long journeys in cars and buses, in which prolonged sitting is the decisive trigger for thrombosis.

The "Vienna views" will concentrate on two points:
1. Report of a consensus conference on travel thrombosis,
2. Traveling compared to other risk factors based on a cohort of 543 DVT patients.

REPORT OF A CONSENSUS CONFERENCE ON TRAVEL THROMBOSIS

In May 1995 an Austrian consensus meeting on the subject of travel-related thrombosis was organized in Vienna.[1]

Three main subjects had been discussed:

1. Definition of travel thrombosis

Travel thrombosis is defined as venous thromboembolism in connection with a long journey (5 hours or longer) in the sitting position (airplane, car, bus, train) in a person without symptoms when the travel was started. The symptoms may occur immediately during or after the journey, up to two weeks later.

2. Risk groups for travel-thrombosis

In order to be able to give reasonable recommendations three risk groups were defined in analogy to the risk groups in general medical thromboprophylaxis.[2]

3. Recommendations to prevent travel thrombosis

The recommended measures (Tab. II) depend on the risk-groups defined in Tab. I.

The results of the Vienna consensus meeting have been worked out after long and intense discussions and reflect a sort of minimal agreement between the discussants. However, they have been shown to give useful guidelines for the consultation of patients in everyday practice.

TRAVELING COMPARED TO OTHER RISK FACTORS BASED ON A COHORT OF 543 DVT PATIENTS

All consecutive patients being admitted because of DVT between January 1996 and December 1998 have been analyzed prospectively regarding their individual risk factors as listed in the update of the "Reporting standards in venous disease" document of the Society for Vascular Surgery.[3]

Table III shows the frequency of patients older than 70 years, with a history of VTE and with associated malignant diseases in the total group of 1,111 consecutive patients with DVT between 1992 and 1998.

In a subgroup of patients who were admitted because of DVT between 1996 and 1998 additional risk factors[3] were analyzed (Tab. IV).

7.18 % of our patients presented a history of traveling in accordance with the definitions of the above-mentioned Vienna consensus.

Some characteristics of this group of 39 patients are given in Table V.

In our own experience the majority of patients give a history of ground traveling. Dyspnoea as a symptom of pulmonary embolism is seen more frequently than in the whole group of 1,111 DVT patients, in which 30.5 % of the patients with scintigraphic PE had symptoms (n.s.). The fact that malignancy was found in 2 cases by active screening underlines the importance also to consider additional risk factors besides the history of traveling.

All mobile patients including two patients who were brought by emergency directly from the airport got firm compression bandages and were encouraged to walk. Anticoagulation was initiated by subcutaneous injections of dalteparin (200 IU/kg body weight) given for a mean period of 11.4 days. Overlapping oral anticoagulation with Marcoumar adapted to reach an INR between 2.0 and 3.0 was administered for at least 3 months.

CONCLUSIONS

A history of recent travel is a risk factor for venous thromboembolism.[4] In contrast to the report from Hawaii,[5] in continental Europe travel thromboses are more frequent after car and bus journeys (70%) than after flights (30%).[4] Proposals concerning definition of risk groups and prevention of travel-thromboses have been made by a Viennese consensus group in 1995. Recommendations of an international task force would be desirable.

References

1. Konsensus Reisethrombose. Expert-meeting May 6, 1995, Vienna. Ärztewoche spezial.1995; 3-15
2. Nicolaides AN, Bergqvist D, Hull R. Prevention of venous thromboembolism. International Consensus Statement (Guidelines according to scientific evidence), *Int Angiol.* 1997;16:3-38.
3. Porter JM, Moneta GL and an International Consensus Committee on Chronic Venous Disease. Reporting standards in venous disease: An update, *J Vasc Surg.* 1995;21:635-645.
4. Ferrari E, Chevallier T, Chapelier A, Baudouy M. Travel as a risk factor for venous thromboembolic disease: A case-control study, *Chest.* 1999;115:440-444.
5. Eklöf B, Kistner RL, Masuda EM, Sonntag BV, Wong HP. Venous thromboembolism in association with prolonged air travel, *Dermatol Surg.* 1996;22:637-641.

Table 1.– Risk groups for travel-thrombosis (increased risk if two or more factors are present)

Low risk	Medium risk	High risk
Everybody on a travel in sitting position > 5 hours	age >40	previous VTE
	heart failure	malignant disease
	severe varicose veins, chronic venous insufficiency	Thrombophilia
	hormone-intake	family-history of VTE
	Obesity	plaster on lower extremity
	pregnancy / postpartum	recent surgery with increased risk

Table 2.– Prevention of travel-thrombosis

Low risk	Medium risk	High risk
Ankle-movement, isometric exercises, repeated walking, step-toes	like in low-risk group plus:	like in low- and medium-risk group plus:
sufficient fluid intake, no alcoholic drinks (they promote dehydration)	lower leg – compression stockings class I-II	low-molecular-weight heparin (e.g. 5000 IU dalteparin, 40 mg enoxoparin), 2hours before traveling starts
restricted use of narcotics and tranquilizers		(daily in round trips)

Table 3.– Age, prior history of DVT and malignancy as risk factors in 1111 patients with DVT

N = 1111 (5/92-12/98)	n	%
Age > 70 y	508	46
Previous VTE	318	29
Malignancy	201	18

Table 4.– Frequency of additional risk factors in 543 patients with DVT

N= 543 (1996-98)	n	%
Immobilization	72	13.3
(Travel thrombosis)	39	7.18
Postoperative	23	4.2
Limb trauma	24	4.4
Abnormal clotting	52	9.6
Hormonal therapy	39	7.2
Pregnancy and postpart.	8	1.5
Obesity	89	16.4

Table 5.– Characteristics of 39 patients with travel thrombosis (7,18 % of consecutive DVT patients admitted between 1996 and 1998).

Mean age	63,1
Sex f:m	24: 15
Localization: right :left iliofemoral femoropopliteal lower leg	 41: 59 6 (15.4%) 28 (72%) 5 (13%)
Malignancy	6 known, 2 newly detected (27.5%)
Primary PE (baseline lung scan)	17 /38 (447%)
symptomatic (mild dyspnoea)	7/17 (41%)
Repeated lung scan: new PE 2 (asymptomatic) improved or normalized unchanged	 11 4
Treatment:	
Compression bandages + walking + dalteparin (Fragmin")	200 IU /kg/day s.c., mean duration 11.4 days
Secondary prophylaxis: oral anticoagulants (INR 2-3) dalteparin 5000 IU /day	 32 7
Air-travel	11 (28%)
Car, bus, train	28 (72%)

SYDNEY VIEWS

Reginald S.A. Lord, MD, FRCS, FRACS
St. Vincent's Hospital
Darlinghurst NSW, Australia

Australia is a large island continent with Sydney the most common entry port for air travellers. Non stop flights between Sydney and Los Angeles take up to fourteen hours and between Sydney and Honolulu nearly nine hours. Singapore, Bangkok, Bombay and Tokyo are similarly remote.

In the twelve month period from July 1997 to June 1998, 14,144,758 Domestic passengers arrived at Sydney Airport and 7,103,471 International passengers landed for a total number of 21,552,661 passengers. About forty passengers with air travel-related venous thrombosis attended St. Vincent's Hospital Sydney each year. Most of these are international travellers since the majority of Australian domestic flights are relatively short. St. Vincent's Hospital is an inner city hospital which, I estimate, might treat about one tenth of those affected. By extrapolation, about 400 individuals per year present with a clinical syndrome of venous thromboembolism after arriving in Sydney. The risk of travel related clinically presenting venous thrombosis can thus be derived at about 0.0014% per traveller per international flight. This estimate is based on the number of all passengers including children, infants and younger adults. A more realistic assessment of the risk for adults over 40 might perhaps be three times the global estimate or 0.004% clinically significant venous thromboses per international flight. Non clinical or latent venous thrombosis could be expected to be 25 times this or 0.01% per international flight. Frequent flyers or those with multiple long flights per journey would correspondingly increase the risk.

In 1993 we presented our initial findings in 45 patients (24 females, 21 males) with venous thrombosis related to travel.[1] In 37 cases travel had been by air but in the other 8 travel was restricted to road or train, in each case longer than 8 hours. Thirty five of the 37 air travellers had flown for longer than 8 hours with only 2 flying 4 hours or less. The patients ages ranged from 30 through to 79 with 2 peaks in the age incidence, namely around 30 and at 50-60 years. In 18 patients pulmonary embolism developed or was the initial presentation. Risk factors identified in this group of patients were a previous history of venous thromboembolism (31%), pre-existing varicose veins (20%), systemic lupus erythematosus or other autoimmune disease (11%), pregnancy (3%), and lower limb ischaemia (2%).

Our ability to test for hypercoaguable states then was not as well developed as at present but nevertheless, one or more hypercoaguable factors were detected in 21 patients (47%). These included increased plasma fibrinogen (9%), phospholipid antibody syndrome (5%), antithrombin III deficiency (3%) and polycythemia (2%). We concluded that long distance travel by air or other means does predispose to venous thromboembolism but the risk of venous thromboembolism was small in comparison to the total number of travellers. However, in travellers who are particularly susceptible to venous thrombosis by virtue of pre-existing vascular risk factors or the presence of a procoagulant blood abnormality, the risk is much greater.

Our more recent experience of over 200 patients is summarised elsewhere[2] but procoagulant blood abnormalities were found in about half of those with clinically significant venous thromboembolism related to flight. Protein C activating enzyme deficiency was the most common abnormality.

We recommend that all travellers over 40 should wear elastic support stockings, abstain from alcohol or restrict alcohol consumption, move around the cabin freely, drink plenty of non alcoholic beverages, try to avoid hip and knee angulation for prolonged periods during the flight and avoid heavy sedation. Those who are known to be at high risk should have low molecular weight heparin before, during and after the flight continuing for 48 hours after resuming normal activities.

References

1. Lord RSA, McGrath M. Travellers Venous Thrombosis. Presented at the International Society of Cardiovascular Surgery Meeting, Lisbon, Portugal, September 1993.
2. Parsi K, McGrath M, Lord RSA. Travellers Venous Thrombosis. Presented at the Third Pacific Vascular Symposium on Venous Disease, Kohala Coast, Hawaii November 1999.

CHICAGO VIEWS

Joseph A. Caprini, MD, MS, FACS, RVT
Northwestern University Medical School
Chicago, Illinois, USA
J. Dubow, BA

For the most part, modern air transportation is safe. Each year, more than one billion people travel by air world-wide,[1] and the overwhelming majority of them complete their flights safely. The true incidence of in-flight emergencies is unknown, as many airlines either do not keep records of in-flight emergencies or do not make their records public. A recent study at Seattle-Tacoma International Airport reported the incidence of in-flight emergencies to be 1/39,600 passengers.[3] The death rate during flight for the years between 1977 and 1984 was reported as one death per 3.25 million passengers.[2] Of the reported in-flight and post-flight deaths at London-Heathrow airport between 1979 and 1983, pulmonary embolism was the second leading cause of death (18%).[4] Based on the number of reported cases, it may be concluded that venous thromboembolism in air travelers is very rare; however, certain passengers are more at risk depending upon the presence of predisposing risk factors for venous thromboembolism. Venous thromboembolism may develop during or immediately after a flight, or even days later. With the increased volume of air travel during the last decade, the problem has become more important and has been referred to as the "Economy Class Syndrome."[4,5,17]

Numerous studies report that the important extrinsic risk factors for air travel-induced venous thromboembolism are: advanced age, obesity, immobility, recent surgery, malignancy, heart failure, use of estrogen containing hormone preparations, and dehydration. In 1996 Eklof, et al[5] reported 44 cases of thromboembolism during or after air flights of 5-17 hours at Honolulu International Airport. Of the 44 patients studied, the identified risk factors were: a history of DVT (34%), presence of a related chronic disease or malignancy (25%), hormone therapy (16%), recent lower limb surgery (11%), and recent surgery or femoral catheterization (9%). Five percent of the total group did not have any apparent predisposing risk factors.

It is important to note that the predisposing risk factors found in patients with confirmed venous thromboembolism following air travel were very similar to those risk factors found to be significantly more prevalent in non-air travel patients with confirmed venous thromboembolism. A study by Caprini, et al[7] determined that the risk factors associated with confirmed DVT were: a history of venous thromboembolism, malignancy, age over 70, prior immobilization, hypercoagulability, history of major surgery, and leg edema. In both studies, it was determined that a history of venous thromboembolism was the most significant factor related to development of thromboembolism. It appears that people with a history that puts them at greater risk for developing venous thromboembolism under normal circumstances are more at risk for developing a thromboembolism during or after air travel.

Additionally, certain intrinsic risk factors put people at a greater risk for venous thromboembolism. A few genetic abnormalities leading to hypercoagulability and thrombophilia have been associated with thromboembolic disease. The most common inherited predisposing cause of venous thromboembolism is the factor V Leiden mutation, which is present in four to six percent of the general population, and is associated with activated protein C resistance.[8] Heterozygotes for this mutation have a five to tenfold increased risk for venous thromboembolism, while the risk for homozygotes increases by eighty fold.[9] Another mutation, a guanine to adenine nucleotide substitution at nucleotide position 20210 in the prothrombin gene, is associated with higher prothrombin levels and a greater risk for venous thromboembolism. In one study, carriers of this allele had a 2.8-fold increased risk for venous thromboembolism compared with persons homozygous for the allele.[10] Also, hyperhomocysteinemia, caused by a mutated 5-methyltetrahydrofolate reductase (MTHFR), is linked to venous thromboembolism. A mutated MTHFR allele, when it is associated with elevated plasma homocysteine levels, is a con-firmed risk factor for a thromboembolic event.[11] To date, there have been no reported studies indicating the percent of air travelers with a mutated allele who experience a venous thromboembolism after air travel, but such studies are needed to assess the effects of this risk factor.

The occurrence of venous thromboembolism from air travel may arise from certain air cabin-related risk factors which, when superimposed on patient-related risk factors, increase the risk for air travel-related venous thromboembolism. These variables influence all of Virchow's variables: hypercoagulability, stasis, and vascular endothelial damage, and cause dehydration and decreased venous flow velocity. Low cabin humidity of 8-12%[5] increases fluid loss, which leads to dehydration. Inadequate fluid intake, the diuretic effect of alcohol consumption, and the dependency distribution of fluids with swollen feet and legs further exacerbate this condition. At the physiological level, dehydration results in hemoconcentration and increased viscosity.

Furthermore, air travel puts people at risk for DVT because passengers experience mild hypoxia as the airplane ascends. A modern airliner flies at cruising altitudes from about 28,000 ft. to 43,000 ft. As altitude increases, the atmospheric pressure decreases from 760 mmHg at sea level (14.7 psi) to 176 mmHg (3.40 psi) at the typical operational level of 35,000 ft. Aircraft are pressurized with atmospheric air by use of compression to avoid problems such as decreased partial pressure of oxygen and expansion of gases within

the passenger's body. However, aircraft are not pressurized to sea level but to a differential of approximately 8.60 psi. Assuming a flight at 35,000 ft. where the atmospheric pressure is only 3.40 psi, the cabin compressor adds another 8.60 psi. The ambient pressure is 3.40 psi plus 8.60 psi, or 12.0 psi, which is the atmospheric pressure at 5,500 ft. above sea level. Similarly, the cabin pressure at 40,000 ft. is 2.72 psi plus 8.60 psi, or a psi of 11.32, which is equivalent to an altitude of 7,500 ft. Therefore, the partial pressure of oxygen in the cabin is always decreased above a flight level of 22,500 ft.

The alveolar pO_2 of a person with normal lungs is 107 mmHg at sea level, where the atmospheric pO_2 is 159 mmHg. At the 5,000-ft. level simulated by the pressurized aircraft actually flying at 35,000 ft., the atmospheric pO_2 drops to 130 mmHg and the alveolar pO_2 to 76 mmHg. At a simulated cabin pressure of 8,000 ft., the atmospheric pO_2 is 116 mmHg, and the alveolar pO_2 drops to only 59 mmHg. Thus, the decrease in pO_2 as the plane ascends can lead to a hypoxic state for the passengers. However, the vulnerability of a patient to hypoxemia at altitude depends on the alveolar or arterial pO_2 of the patient at sea level and his/her physiological ability to compensate for a decrease in pO_2 as the plane ascends.[12]

Collected data suggest that hypoxia decreases endothelial cell fibrinolytic activity and may lead to the production of oxygen-derived free radicals, which can release endothelium-derived relaxing factors.[13] As a result, decreased fibrinolysis enhances hypercoagulability, relaxation of the venous wall leads to decreased flow velocity and stasis, thus putting passengers at greater risk of developing venous thromboembolism.

Moreover, being immobilized in the coach position itself causes depressed venous flow velocity. Venous thromboembolism arising from sitting in cramped aircraft seats parallels the experience encountered by individuals who tried to escape the bombing of London in 1940 by going into the Underground and sleeping overnight on deck chairs. Simpson reported an association between sitting overnight on deck chairs in air-raid shelters and death from pulmonary embolism. In September/October of 1940 he diagnosed 24 cases, 21 of which had occurred in, or soon after leaving air-raid shelters.[14] Wright and Osborn[5] showed that venous flow velocity was about halved when a subject sits as opposed to being supine. Although it has not been reported, it can be hypothesized that decreased venous flow velocity while sitting results in venous distension. Coleridge-Smith, et al demonstrated that administration of muscle relax-ants to facilitate intubation during an operative procedure under general anesthesia results in venous distension, in addition to the slowing of venous blood flow.[15] They proposed that the increased diameter in the deep veins of the legs may lead to endothelial damage, a factor suggested by Virchow that predisposes people to venous thromboembolism. Further evidence to support this theory has been suggested by Comerota who demonstrated electron microscopic cracks in the endothelium following venous distention.[16] Similar physiological changes may be occurring in patients after prolonged sitting due to the decrease in venous flow velocity, thus putting passengers at a greater risk for venous thromboembolism. Also, pressure on the calves from the seat will impair venous outflow and exacerbate venous stasis. Decreased circulation due to immobilization and pressure from the seat forces capillary pressure to exceed colloid osmotic pressure, thus causing filtration of fluid from the circulation and swelling of the legs and feet.[5]

To reduce the risk of the "Economy Class Syndrome", simple precautions should be taken. First of all, cabin-related risk factors that cause hypercoagulability and stasis can be corrected by frequent leg and body exercises, and regular walks. However, passengers need to be cautious about ambulation on the aircraft due to occasional reports of passengers experiencing injury or death from clear air turbulence. Booking reservations on the aisle seat is suggested, as there is more leg stretch room and it is easier to walk around. Individuals should definitely change their positions frequently and engage in numerous stretching exercises. Smoking (now forbidden on virtually all flights), which causes hypoxia and increases blood viscosity, and excessive alcohol consumption should be avoided. To avoid dehydration, regular nonalcoholic beverages should be consumed (at least 1 liter per 5 hours of flight).[5]

Patients with intrinsic risk factors should use therapeutic compression stockings to reduce swelling of the legs and increase venous flow velocity. Patients with a history of DVT, chronic disease, malignancy, recent surgery or vascular interventions should consider prophylaxis with low-molecular weight heparin to prevent DVT. Some authors have also advised high-risk passengers to minimize platelet adhesion by taking an aspirin each day for a few days prior to a long flight, unless otherwise contraindicated.[17] However, the use of aspirin as a preventative measure is controversial according to the latest consensus guidelines.[18]

Another way that high-risk patients can reduce the risk of venous thromboembolism during air travel is through the use of a foot pump. An arteriovenous (A-V) impulse system has been designed to simulate a physiological pumping mechanism in the sole of the foot, which is activated by the flattening of the plantar arch on weight-bearing, discovered by Gardner and Fox in 1983. This device has been shown to maintain venous circulation as effectively as does normal walking and its use reduces post-traumatic pain, swelling, and compartment pressures.[19] The A-V impulse system exhibits its antithrombotic effect by generating sudden, intermittent increases in venous flow and by producing turbulence in the valve pockets where thrombosis commonly begins. Studies have shown the foot pump to be effective in reducing the incidence of proximal DVT from 32.5% to 5% after total hip replacement; from 23% to 0% after hemiarthroplasty; and from 18.7% to 0% in total knee replacement.[20] Unfortunately, these devices have not been adopted for use on aircraft to date.

In summary, modern air transportation is safe, but venous thromboembolism is an identified problem associated with long flights and deserves greater attention. Even though a few reported cases of DVT/PE following air travel have occurred in passengers with no previous medical history, certain risk factors are associated with the development of air travel-related venous thromboembolism. For individuals with pre-existing risk factors, long trips in cramped conditions by air do carry a risk of DVT/PE. In the future, physicians should have their patients take an individual risk assessment before long distance travel. Using a risk assessment scale, like that developed by Caprini, et al,[7] physicians can classify passengers as low, moderate, or high in their risk for venous thromboembolism. Those passengers who are low-risk (1 factor) should not use prophylaxis, but should be told to drink enough fluids and occasionally stretch their legs. Passengers who are classified as moderate-risk (2 factors) should use calf-length antiembolism graduated hose at 18-20 mm.

Calf-length hose are sufficient to improve the efficiency of the calf muscle pump. Furthermore, compliance with this length of hose is excellent compared to the long-leg variety. High-risk patients (3-4 factors) should use calf-length antiembolism graduated hose at 30-40 mmHg, in addition to the other measures to decrease stasis and maintain adequate hydration. Patients who are in the highest risk category (5 or more factors) should consider low-molecular weight heparin during the flight. The use of foot pumps in these passengers may be beneficial if this method eventually becomes available.

Further study is needed to elucidate the role of cabin-related risk factors that cause dehydration and decreased venous flow velocity, and how they have a synergistic effect on patient-related factors to increase the risk of venous thromboembolism. To decrease the prevalence of this problem, reasonable and simple measures could be implemented by the airlines. For example, they could make passengers aware of the dangers of dehydration during flight, encourage the consumption of non-alcoholic beverages, and discourage the use of alcoholic beverages. Airlines could also increase the space between passengers to give them more room to stretch their legs during flight. It would also be helpful if they developed brochures on medical conditions which may be exacerbated by air travel in order to educate patients and reduce thrombosis-related problems.

References

1. Renee KS. Safe air travel: Preventing in-flight medical problems, *Nurse Practitioner*. 1994;19:39-46.
2. Cummins RO, Chapman PJC, Chamberlain, DA, Schubach JA, Litwin PE. In-flight deaths during commercial air travel, *JAMA*. 1988;259:1983-1988.
3. Cummins RO, Schubach JA. Frequency and types of medical emergencies among commercial air travelers, *JAMA*. 1989;261:1295-1299.
4. Landgraf, H, Vanselow B, Schultz-Huermann D, Mulmann, MV, Bergau L. Economy Class Syndrome: Rheology, fluid balance, and lower leg edema during a simulated 12-hour long distance flight, *Aviat Space Envir Med*. 1994:930-935.
5. Eklof BO, Kistner RL, Masuda EM, Sonntag BV, Wong HP. Venous thromboembolism in association with prolonged air travel, *Dermatol Surg*. 1996;22:637-641.
6. Forbes CD, Johnston RV. Venous and arterial thrombosis in airline passengers, *Journal of the Royal Society of Medicine*. 1998;565-566.
7. Caprini JA, Arcelus JI, Motkie GD, Zebala LP, Lee, CE, Finke NM, Tamhane A, Reyna JJ. Risk factor assessment in the management of patients with suspected deep vein thrombosis, *International Angiology*, in press.
8. Ridker PM, Miletich JP, Stampfer MJ, Goldhaber SZ, Lindpainter K, Hennekens, CH. Factor V Leiden and risks of recurrent idiopathic venous thromboembolism, *Circulation*. 1995;92:2800-2802.
9. Rosendaal FR, Koster T, Vandenbroucke JP, Reitsma PH. High risk of thrombosis in patients homozygous for Factor V Leiden (activated protein C resistance), *Blood*. 1995;85:1504-1508.
10. Poort SR, Rosendaal FR, Reitsma PH, Bertina RM. A common genetic variation in the 3'-untranslated region of the prothrombin gene is associated with elevated plasma prothrombin levels and an increase in venous thrombosis, *Blood*. 1996;88:3698-3703.
11. Hessner MJ, Luhm RA, Pearson SL, Endean DJ, Friedman KD, Montgomery RR. Prevalence of prothrombin G20210A, Factor V G1691A (Leiden), and methyl-enetetrahydrofolate reductase (MTHFR) C677T in seven different populations determined by multiplex allele-specific PCR, *Thromb Haemost*. 1999;81:733-738.
12. AMA Commision on Emergency Medical Services/Medical Aspects of Transportation Aboard Commercial Aircraft, *JAMA*. 1982;247: 1007-1001.
13. Gertler JP, Leland P, L'Italien G, Chung-Welch N, Cambria RP, Orkin R, Abbott WM. Ambient oxygen tension modulates endothelial fibrinolysis, *J Vasc Surg*. 1993;18:939-946.
14. Milne R. Venous thromboembolism and travel: Is there an association, *Journal of the Royal College of Physicians of London*. 1992;26:47-49.
15. Coleridge-Smith PD, Hasty JH, Scurr JH. Venous stasis and vein lumen changes during surgery, *Br J Surgery*. 1990;77:1055-1059.
16. Comerota AJ, Stewart GJ, White JV. Combined dihydroergotamine and heparin prophylaxis of postoperative deep vein thrombosis: proposed mechanism of action, *Am J Surg*. 1985;150(4A):39-44.
17. Cruickshank JM, Gorlin R, Jennett B. Air travel and thrombotic episodes: The Economy Class Syndrome, *Lancet*. 1988;ii:497-498.
18. Claggett, GP, Anderson FA Jr., Geerts W, Heit JA, Knudson M, Lieberman JR, Merli GJ, Wheeler HB. Prevention of venous thromboembolism, *Chest*. 1998;114: 531S-560S.
19. Fordyce MJ, Ling RS. A venous foot pump reduces thrombosis after total hip replacement, *J Bone Joint Surg*. 1992;74:45-49.
20. Santori FS, Vitullo A, Stopponi M, Santori N, Ghera S. Prophylaxis against deep-vein thrombosis in total hip replacement: comparison of heparin and foot impulse pump, *J Bone Joint Surg*. 1994;76:579-583.

DISCUSSION

DR. THORPE: That was a wonderful session. I guess it's personal to all of us who flew here, but I wanted to compliment Dr. Eklof and everyone for this. I do have a question for you, Dr. Burnand. You said in laying out this elegant proposal for a study, that you want to include the frequent fliers, and I'm thinking from listening to this that those are the low risk people, actually, because frequent fliers are people who are business people, who usually work out, who are very busy, who try to stay in shape so they can travel. They take all kinds of vitamins, et cetera, and the people who might be more susceptible to DVT are people who are not frequent fliers. What do you think?

DR. BURNAND: There are two views on this. The first is you've got to work within the art of the possible, and the art of the possible is that those are the people who are likely to volunteer to take part in the studies. We've been reassured that of the frequent flier clubs of the groups that we've approached -- and even British Airways amazingly send a lot of their staff economy class rather than at the "pointy" bit of the plane. So the concept that the frequent fliers always fly business or first class is not the case. The other possibility with the frequent fliers, which our hematologist colleague who is part of this study has suggested, is that the whole thing may be cumulative. Namely, if you get a small thrombus occurring within your calf veins, that when you next fly, if you have a previous thrombosis that you haven't known about, that this makes extension more likely. It's like saying if you're up in the air a lot more time, you've got more chances of having one of those horrific crashes that you've just seen. So while I accept that this may not be the case, they are the only group we have available to us, and two, there may just be some possibilities that these people are people who have higher risk. That's something else obviously a prospective study would get a chance to look at, but I think your points are good points and we accept them.

DR. OSMAN: I'd like to ask the panel a simple question. In a patient who has undergone uncomplicated varicose vein surgery and has no other risk factors, how soon would you consider it safe for them to fly?

DR. BURNAND: Very good question. Simple varicose vein surgery, how long after would you recommend that they fly or would you recommend they take prophylaxis based on the lack of evidence which is around as we've shown today? Bo, do you want to start that one going?

DR. EKLOF: I had one of those patients a couple of weeks ago. What I recommended for her was to keep the compression stockings on, and one shot of low molecular weight heparin just before her flight. This was about a week after surgery.

DR. BURNAND: So how long would you not be worried after surgery? I mean, if it was a month post VV surgery would you think that was okay?

DR. EKLOF: I would still recommend the stockings, maybe not heparin.

DR. PARTSCH: The question was after varicose vein surgery?

DR. BURNAND: Well, he said how long afterwards would you recommend them to fly, and if they had to fly what prophylactic measures would you take?

DR. PARTSCH: We operated on patients coming from Berlin, let's say, who went home by plane the next day, but the flight is just

one hour. So if this would really be a long distance flight, I would recommend the same what Bo has said, but he could do it on the next day with good compression plus prophylaxis with low molecular weight heparin.

DR. LORD: I was going to make the same point. The answer depends on how long the flight is. If it was just a short flight I'd suggest it's okay and put on the stocking, but for a long flight within a month of operation, I'd probably give our normal low molecular weight prophylaxis therapy beforehand and keep it going for 48 hours after the flight has concluded.

DR. CAPRINI: I think that's very important, the length of the flight, and I generally like to see those patients at least a week or ten days postoperatively. So oftentimes I won't let them fly for that period of time. I would have them all wear the stockings up to a month, and if it's a flight where they go above 30,000 feet -- if you're only going to fly back to Berlin, they're not going to get up past 20,000 or 23,000 feet, but if it's a longer flight, then I think that you have to take the precautions. I like the idea of giving the low molecular weight heparin, and I like the idea of giving it before they start and continuing it for 48 hours after they're at their destination.

DR. BURNAND: We have quite a few Arabs who come to London for treatment, and we usually recommend at least two weeks after any form of surgery before they even think of going back. That's our recommendation, but it's based on no factual evidence whatsoever. It is a recommendation.

DR. HASANIYA: A very stimulating session. I worked with Dr. Eklof for a year in research, and at one time we thought of arranging a study where you get the consent to scan all passengers in a Boeing 747 before the flight, and then scan everybody after landing. We couldn't do it, but we thought the best group would be military people where people would be cooperative and compliant. The reason I'm saying that is because I think most people that you can have access to scan would be the pilots or co-pilots because these people, are never seen ambulating in the airplane.

DR. BURNAND: We've got those in British Airways. They've given us all their pilots as a potential source of guinea pigs, and they don't ambulate evidently which is surprising.

DR. HASANIYA: But how many pilots have you found in your studies?

DR. EKLOF: We have discussed this, and our next discussant is my friend from the Hawaiian Airlines, Paul Casey. I was in touch with United Airlines' office in Los Angeles, and they had had four pilots who had DVT, but I think it's very rare because they are young, strong, healthy guys.

DR. BURNAND: That's not what the Pilots Association tells us for what it's worth. Your figure of four is not a surprise, and I gather there are quite a few more pilots with thrombosis. Perhaps we just have unhealthy pilots in British Airways.

DR. CAPRINI: I hate to muddy the waters, but as he began to talk, I was thinking of something that was going to be a difficult issue to address, and that is the problems associated with duplex scanning in the asymptomatic patient and how we're going to try to get around that in order to answer this question.

DR. BURNAND: I think that's the real anxiety. That's why we're looking at fibrin degradation products and other markers as our main form of assessment, but what we may be looking at is a prothrombotic state without ever proving that passengers definitely have a DVT because I suspect that even if a passenger gets a big rise in fibrin degradation products, we will be able to show very few of them have an actual DVT.

DR. LORD: Just to say that we've had one pilot in the 122 patients going to our lab in a three-year period.

MR. CASEY: As Dr. Eklof pointed out, my name is Paul Casey, and I'm the president and CEO of Hawaiian Airlines. And if you think that I feel like Daniel walking into the lion's den, you would be correct. Very interesting session. You may wonder why the airlines have not done very much about this. Pure and simple, ignorance. I'm the CEO of a major U.S. airline. We fly all over the U.S., West Coast, inter-island, and South Pacific, and this is the first time I have ever been invited to participate in any session like this. The longest flight we have is five and a half hours, but Qantas and British Airways, of course, fly 13, 14, 15-hour flights. Some of the recommendations I saw in the early presentations are simply not practical. You know, improving seat pitch, i.e., the room between seats is economics. It's driven by shear economics. The last gentleman, forgive me, made some very practical suggestions, and I guess when you look at those who are at high risk, we would look to the medical fraternity to recommend heparin or whatever else it is that you're talking about, with non-consumption of alcohol and increased consumption of fluids. Moving around the airline is a big risk these days. We leave the seat belt sign on all day, all night. Why? Because in clear air turbulence, people hit the roof. They get their necks broken. They get killed or whatever. So moving around the cabin is not a good idea to recommend to people, but I think there are a number of things that we as airlines can do to help prevent this problem, and we need to work with the medical community to find out what those things are. Some airlines, I believe, a number of years ago, maybe SAS, Dr. Eklof, was one used to publish a brochure and had a thing on their in-flight video which talked about squeezing your calf muscles and moving your feet around and drinking lots of fluid, all of which I do because I have worn compression stockings for ten years suffering from varicose veins, which Dr. Eklof is attempting to convince me to get removed. Quite right too, he says. So I find this interesting, and I think although lots of it I don't understand because it's designed for doctors and the medical fraternity, it is very common sense stuff. I find that I would like to pursue some kind of study for Hawaiian Airlines with Dr. Eklof and Straub Foundation.

DR. BURNAND: I think that's very good news, and I think the problem has been to date that the airlines have had a very defensive attitude to looking at DVT. We have examples from Reg who already has his hand in the air. I know Bo has told me a wonderful anecdotal story about an airline that I couldn't possibly talk about. Bo, do you want to give us your anecdote, and then, Reg, we'll have yours while he's still standing at the microphone.

DR. EKLOF: About five years ago we sent a questionnaire to 56 airlines that all landed in Honolulu, and we asked them very simple questions about collaboration and if they were interested to participate in research. That's when we had our great ideas of this 747 and duplex scanning of the passengers before the flight and within one week after arrival in Honolulu. I had one positive response, and that was from the medical director of Philippines Airlines. He happened to be a doctor at Straub. Then I had one letter from this company that was elegantly described by our moderator where they basically told me not to put your nose into this.

MR. CASEY: If I could add one thing, I think the health of our customers is our business. I would imagine the lawyers get involved in this and cause all sorts of barriers.

DR. LORD: I don't want to name any particular airline, but I can tell you that we've been making representations to them for a joint study between Kevin Burnand and myself. There is also traffic between Australia and Hawaii and Bo and I have had discussions about Honolulu and Sydney. I don't know if Russell Hull is still in the audience, but Calgary might be involved also. We've actually spoken with a lot of airlines. In the case of the particular Australian airline I'm talking about I have been told that this matter has been to board level, and their lawyers have advised them not to get involved, believing the incidence is low. Don't rock the boat.

DR. BURNAND: That was also the British Airways line which is from their marketing people who don't want to see it as a problem. If it was less than one percent, then it was something that they would regard as an act of God and not something they should worry about. So I think before we go anywhere, we've got to have some hard information as to how big the problem is. At the moment you've heard the answers to date, and although the studies look similar in the ones that have been published, they're not by any means hard data. They may be grossly overestimating the problem or underestimating it, but we're very, very glad that you came and we're very, very glad that you're going to finance this big study that Bo is now going to organize.

DR. LORD: I have been told that one airline has lost a suit for $2 million, settled out of court because they didn't want adverse publicity. A lot of airline antagonism to conducting a study is based on the idea that it's going to put people off flying. I don't think recognition of risk will put anyone off flying. I think the airlines ought to print a little disclaimer on their ticket saying flying is a health hazard or similar and can cause this, that, and the other medical problem, but this won't stop anyone flying. This approach would protect the airlines and help the passengers.

MR. CASEY: I happen to agree with you. It will not stop anyone flying. The world population is flying more and more than ever and will continue to do so.

DR. BERNHARD: I have truly enjoyed this discussion. It seems to me that one of my questions has already been answered by Reg Lord. A couple of good, stiff lawsuits might get the attention of the airlines. Some of the things that may add to the hard science we would like to have, would support the enthusiasm to look a little deeper at a fewer practical questions and define simple preventive measures. Though I presume that no one has been on anticoagulation at the time he got travel DVT, and that's a question that should be clarified. What about the use of elastic stockings? Has anybody developed supposed airline DVT while wearing them? What's the minimum number or do we have any idea of the average number of hours of a flight in travelers who developed DVT. We all assume that the longer the flight, the more likely that DVT will appear. A one-hour flight wouldn't be a problem, whereas a 12-hour flight would. A simple approach might be to question travelers who are considered frequent fliers to find out from that group the incidence of factors suggesting venous insufficiency among these individuals.

DR. CAPRINI: I just wanted to say one thing about that. As Victor described, he described people and lives and incidence in essence, and I think if you take a very global look at this, people get DVT's while they're on Coumadin, if their INR isn't right. People get DVT with compression stockings. Let's say they develop a cancer. There are plenty of people. There are 15 million people in the United States at least that develop a venous ulcer, and there's another 10 or 15 million with various forms of chronic venous insufficiency. That's why I think that an individual risk assessment of every single patient is important. You certainly would do that if you were going to do an operative procedure. Well, why don't you just do the same thing for this? In the vast majority of patients, and I think that the airline CEO picked up on that very quickly, putting on some stockings, drinking some fluids, there's some relatively simple measures for most of us who are in the moderate risk group that would really help to take care of this problem and dramatically lower the incidence. One final thing, if you take 1,000 general surgical patients and you don't use prophylaxis, 30 percent of them will get a clot. You'll only see three and a half percent. If you do something as simple as using pneumatic compression on that whole group, you will cut the incidence from 20 or 25 percent down to less than two or three percent. Just simple measures like that could vastly lower this problem, but of course, we do have to document, that's a problem, but I think it is about human beings and flying is just another thing that they do that puts them at risk.

DR. STRANDNESS: I just have one brief comment. I served in the strategic air command, and I can tell you that bomber pilots in the strategic air command stay up for very long periods of time because they often refuel several times. I wonder if you've ever asked the Air Force surgeon general about any evidence or any information at all about this problem in bomber pilots who may be up for 18 or 20 hours.

DR. BURNAND: One thing I learned from our visit to British Airways is that the medical director who was a Jagnar pilot tells me that air force pilots are now fitted with pee packs which is a little device that fits over the penis which makes it preferable if you're a pilot to be a male as far as I can see. It has a little sponge inside to absorb the urine. So nowadays that isn't a problem, but I don't know whether anyone else wants to comment specifically on the bomber pilots. Service personnel? Any experience from that? Joe, you've done your time in the forces.

DR. CAPRINI: Yes. The one thing I would say is now the B-2 flies out of Wittman Air Force base in Missouri anywhere in the world and they always come back and land there.

DR. BURNAND: Is there a high incidence or is it actually lower because you're dealing again with the fit young men type problem rather than --

DR. CAPRINI: Unless they have ulcerative colitis, like I mentioned earlier, they're probably very low risk.

TRAVELLER'S VENOUS THROMBOEMBOLISM

Kurosh A. Parsi, MD
St Vincent's Hospital
Sydney, Australia
M.A. McGrath, R.S.A. Lord

OBJECTIVE

To examine the characteristics of patients who developed venous

thromboembolism after long-distance travel and to look for thrombophilic and other risk factors in this group.

METHODS

Between 1996 to June 1999, 122 patients presented to the vascular laboratory with venous thromboembolism following travel (plane, car, train, coach) within the previous 4 weeks. Sixty four patients (32 females, 32 males) who were treated by us suffered from 71 thromboembolic events including deep venous thrombosis (DVT, 57 events in 51 patients, 80%), pulmonary embolism (PE, 23 events in 22 patients, 33%), and superficial thrombophlebitis (STP, 19 events in 18 patients, 27%). The average flight time was 11.2 hours.

RESULTS

Forty-seven patients were tested for thrombophilic blood abnormalities with 34 (72%) demonstrating an abnormality. Seventeen patients (36%) had one thrombophilic abnormality, 12 patients (25%) had two, 3 patients (6%) had three, and one patient (2%) had 4 thrombophilic abnormalities. The procoagulant abnormalities found are summarised in the following table:

Five patients (8%) had a family history of thrombophilia. Twenty-four of 41 patients (58%) were considered overweight (Body Mass Index >25). Twenty-seven of 47 patients (57%) drank more than 20 grams of alcohol during the fight. Twenty of 32 female patients (60%) were taking hormonal supplements either the oral contraceptive pill (11 patients) or oral hormone replacement therapy (9 patients). Ten patients (16%) gave a history of previous DVT and 4 (7%) a history of previous PE. Other contributing factors included: concurrent soft tissue injury (7 patients, 11%), concurrent infection (5 patients, 8%), recent operation (4 patients, 6%), history of lower limb fracture (8 patients, 12%), impaired ankle joint mobility (2 patients, 3%), malignancy, inflammatory bowel disease and peripheral vascular disease (3 patients, 4% each) and 14 of 59 patients (24%) had a family history of DVT.

CONCLUSION

Venous thromboembolism is a potential complication of long-distance travel especially when procoagulant blood abnormalities or other risk factors are present.

DISCUSSION

DR. BURNAND: Essentially the message seems to be that 72 percent of the patients have thrombophilia, and that now needs to be proven in prospective studies. Does anyone want to make any comments from the floor or from the panel?

DR. PARTSCH: You said 55 percent were traveling in economy class, and I'm missing the figure. 15 percent in business class?

DR. PARSI: 15 percent, yes.

DR. PARTSCH: How does this compare to the usual distribution between economy class and business class in order to assess the correctness of the term "economy class-syndrome". One could extrapolate that there were more thrombosis in business-class; right?

DR. PARSI: That's right. I don't have the exact figures. We should look it up.

DR. BURNAND: I think that's a important question and the one that I also wanted to ask, which is what's your denominator. Again, we keep coming back to what the denominator is. If it's different than normal distribution, then it shows that business class is almost at increased risk which seems surprising.

DR. CAPRINI: I would like to turn that around a little bit. Patients that fly business class and/or first class often are older, more affluent, have had more operations, may have had more chance to develop more of those things on our risk factor list that would make them even higher risk. So although I think it was very cute and it was a great way to put our foot in the door what Bo did with us with coining the term economy class, I think we now have to move to risk assessment of all the patients, and that is the overriding factor. If you're Leiden positive and you're flying in first class, that's going to be a much more important determinant of whether or not you're going to have a clot versus whether you're back there in the cramped section.

DR. BURNAND: Just one thing I picked up in your data. You said that half were women and half men; is that right?

DR. PARSI: Yes.

DR. BURNAND: Yet 60 percent of your whole population were on the contraceptive pill.

DR. PARSI: No. That was 60 percent of female patients.

DR. BURNAND: That's a relief, I knew you had some funny fellows in Australia!

Procoagulant abnormalities	Patients tested	Patients positive	Percentage
Activated Protein C Resistance	47	22	47%
Factor V Leiden mutation	47	16	34%
- Heterozygous		14	30%
- Homozygous		2	4%
MTHR* gene mutation	34	15	44%
- Heterozygous**		9	26%
- Homozygous		6	18%
Prothrombin gene mutation	37	9	24%
Protein S Deficiency	43	3	7%
Protein C Deficiency Antibodies	42	2	5%
Ig G Anticardiolipin	44	3	6%
Lupus anticoagulants	45	1	2%
Antithrombin- III	46	0	0%
Any abnormality	**47**	**34**	**72%**

* Methylene tetrahydrofolate reductase
**Possible risk factor

RISK FACTORS FOR VENOUS THROMBOEMBOLISM FOLLOWING PROLONGED AIR TRAVEL: A PROSPECTIVE STUDY

Berndt Arfvidsson, MD, PhD
Visiting Colleague, Department of Surgery,
University of Hawaii,
John A. Burns School of Medicine
Honolulu, Hawaii, USA

The aim of this study was to analyze patients with air travel-related venous thromboembolism (VTE) concerning the occurrence of patient-related and cabin-related risk factors. Twenty-five patients with deep vein thrombosis (DVT) and/or pulmonary embolism (PE) with onset of symptoms during or after prolonged air travel were questioned according to a study protocol while they were still in hospital for treatment and had the details fresh in memory. There were 14 women and 11 men with an age range of 36-79 years. The flight time ranged from 5 to18 hours. All patients had DVT, and nine (36%) had PE as well. The proximal extension of the thrombus were in tibial vein, five patients; popliteal vein, two patients; superficial femoral vein, three patients; common femoral vein, four patients; greater saphenous vein, four patients; and iliac vein, seven patients. All but two patients (92%) had one or more patient-related risk factors, the mean was three. Obesity was present in 76% of the patients; chronic heart disease in 44%; hormone medication in 40%; other chronic diseases such as diabetes mellitus, rheumatoid arthritis, chronic renal failure, hypercholesterolemia in 32%; history of previous VTE in 28%; malignancy in 28%; smoking in 20%; recent lower limb injury in 16%; and recent surgery in 12%. Only two patients had no known patient-related risk factor. The flight travel itself does not seem to be an important risk factor in healthy individuals. However, when patient-related risk factors are superimposed, there is increasing evidence that cabin-related risk factors such as immobilization, cramped "coach" position, insufficient fluid intake, low humidity, and relative hypoxia contribute to development of VTE. Quiet cramped sitting in the special ambience the pressurized flight cabin implies, results in a large number of rheological and biochemical alterations affecting all three of the variables in Virchow's triad; hypercoagulability, venous stasis, and vein wall lesion, which constitute the etiologic basis for development of venous thrombosis. To decrease the risks, the information has to be improved so that the passengers well in advance can prepare for prophylaxis if needed. Also, in-flight information about exercises and fluid intake should be improved. Active precautions are described.

DISCUSSION

DR. PADBERG: I raise the question of multiple long distance flights as opposed to only the last leg. This was just renewed in the presentation from Sydney. Many of these people, much as Richard Nixon did, continued to travel despite onset of symptoms and had traveled on multiple long flights. As Mr. Burnand and Professor Partsch also know, many of us have also traveled on at least two planes to get to Hawaii. So my question is whether or not you looked at that. We recognize that it's hard to get at; but the last report from Straub did not have this information. I was wondering if you were able to add this information in the update. The second question has to do with something a bit more local which I think is perhaps within the power of Straub and its organization here in Hawaii. As is quite obvious (since we have all come to the Big Island) not everyone stops at Honolulu and goes to Straub. So ideally one could survey physicians hospitals of the Hawaiian Medical Society to identify those that had onset of treatment for DVT, PE, or various combinations thereof on the other islands. Did you look at that is the other question?

DR. ARFVIDSSON: To begin with the second question, no, we did not. And the first question, we only added different travelers. We didn't look into every single trip.

DR. BERNHARD: Did you stratify those patients by class of travel?

DR. ARFVIDSSON: No, we didn't.

DR. BERNHARD: We have been knocking economy travel and I do love to fly in business and first class. On the other hand, it occurred to me that if you're uncomfortable you'll move and if you're comfortable you won't. So stasis may theoretically be greater in patients who are in business and first class because they're in much more comfortable seats and less inclined to move their legs.

DR. ARFVIDSSON: I think the suggestions from Vienna and Chicago looked OK. We could well agree with them.

DEEP VEIN THROMBOSIS IN AIRLINE PASSENGERS - THE INCIDENCE OF DEEP VEIN THROMBOSIS AND THE EFFICACY OF ELASTIC COMPRESSION STOCKINGS

John H. Scurr, FRCS
Middlesex and University College Hospital
London, United Kingdom
P.D. Coleridge Smith, FRCS, S. Machin, MRC Path.

A prospective study to determine the incidence of deep vein thrombosis in passengers on long haul flights, and to determine the efficacy of elastic compression stockings in reducing this incidence. Two hundred patients over the age of 50, with no past history of venous thromboembolic disease, no co-existing medical problems, and no specific risk factors, undergoing flights of eight hours or more, have been accessed. All patients have undergone Duplex ultra-sound imaging two weeks prior to departure. Immediately prior to departure, a repeat Duplex ultrasound scan was carried out, and blood taken for D-dimer and thrombin antithrombin complex (TAT) as markers of a hypercoagulable state and soluble vascular cell adhesions molecule (VCAM-1). All patients completed a pre-travel questionnaire. The patients were randomly allocated to receive or not receive elastic compression stockings. On return, each patient was again scanned, and a further blood sample taken for analysis.

Those patients with high levels of D-dimer, TAT or VCAM-1, underwent a full thrombophilia screen. Those patients with a positive Duplex scan on visit one or two were excluded from the study. Those patients with a positive scan on return were considered to have developed thromboembolic disease, and underwent further investigations.

The results are being analysed on an intention to treat basis. The

study will conclude when 100 patients have been recruited to each group.

DISCUSSION

DR. BURNAND: Can I say we have just done a study with a whole series of custom-built stockings on individual volunteers trying to look at venous velocity and changes, and it didn't seem to us there was a huge amount of difference between different profiles. So while we've been handed down a profile for years from the work of Siegel, I'm not sure that we've got any evidence that's the right profile, but it seems to work. Has anyone got any other thoughts on the stocking pressure profile?

DR. CAPRINI: This isn't based on Level I data, but any time in our vein clinics that we try to take care of people with true symptoms of venous insufficiency and go below a 30 to 40 product they often fail.

DR. BURNAND: I think there's a difference between DVT prophylaxis and venous insufficiency. I wouldn't like the two to get muddled.

DR. HASANIYA: I might have missed a point, but if you look at all the studies, we are listing all these risk factors which we have learned from other conditions of DVT, but yet I don't think we can blame these risk factors unless we have control patients. Something to consider in future studies.

DR. BURNAND: That's what we haven't got. We're looking at people that have a DVT, and that is the argument in favor of prospective studies which is the argument you're going to make. Dr. Scurr, I didn't know whether it was Freudian slip or not, but you went between passengers, patients, and subjects. In the end I wasn't quite clear which of these groups you have studied. You trawled for people who were interested with an advert in the local papers?

DR. SCURR: Yes. We actually did look for passengers really, some became patients. You're correct. It's a Freudian slip. The way we got the passengers was to advertise in the local newspapers. We had a fair amount of national advertising as you probably recall, but of course, the patients are so far away that's impractical. What we've done, in fact, is advertised in the West London area. We've also advertised in some large travel agents, and that has been quite effective in getting volunteers into the study, but you're correct, essentially passengers, not patients.

DR. BURNAND: Two other questions before we move on to questions from the floor. One is the obvious "gobsmacking" percentage of passengers who developed a DVT. Up until now we've been working on the fact that the incidence is going to be extremely low, and here you are reporting a 25 percent incidence out of 20 patients that you've seen already. I thought it was out of 80 patients, but it's in fact rather less than that. How can you explain this? Were these very sick people who volunteered for the study?

DR. SCURR: No. They're not particularly sick. They're over the age of 50. We will eventually be able to analyze this and see precisely whether there are specific risk factors. What we've tried to do is just take the absolutely standard airline passenger, and I've made the point, I think, that when we had our original results from DVT studies, nobody believed the incidence. Of course, it may be that really all we're interested in is the symptomatic patients, but I suspect that we're able to pick up very small clots with a duplex, and it will be very interesting to see what the thrombophilic studies will show. I think in your own study you will find, and I think you alluded to this, that there were going to be quite a large number of patients who had prothrombotic changes which you weren't able to demonstrate a DVT, probably because you weren't looking for it.

DR. BURNAND: But these were duplex positive DVT's? These weren't raises in FDP's or anything else?

DR. SCURR: No. These are purely on duplex. There are four patients that have got positive deep vein thromboses. Admittedly they're calf veins, and only one of the patients is symptomatic, and that was, in fact, probably due to the superficial thrombophlebitic component.

DR. LORD: Echoing what you said, it's a staggering percentage. I mean, there are over 300 folks on a 747. That's about 25 percent of the older passengers.

DR. BURNAND: You have to reduce that by the number over 50, but I would still guess on some of the granny flights too --

DR. LORD: But those with positive scans must be 20 or 30. I suppose the next question is have you confirmed the accuracy of the duplex in your study?

DR. SCURR: Well, it's the same people who are doing our duplex scanning for routine clinical practice. We know they're good. When they get a positive scan it is checked by one of the others, and I accept a degree of observer variation. I mean, I fully appreciate that a study like this is open to some questions, but what the purpose of this was was to try and do a prospective study to try and give us some idea of the incidence, which is high. You're obviously surprised by that. I'm not sure I am surprised by it.

DR. BURNAND: I think we're surprised by it because of the other figures that we've heard bandied about this afternoon. If it was 25 percent I would think you'd have the airlines absolutely hopping up and down and being very anxious abont the results.

DR. CAPRINI: Can I look at this another way? There were 21 million passengers that went to Australia in a calendar year to Sydney. Now, 4 out of 30, I don't know what that is percentage-wise, but that would mean 12 percent of 21 million did not show up in the hospitals. So, I mean, if you look at this incidence of DVT the other way around, it's very, very high.

DR. BURNAND: I'm sure the incidence is much higher than we think. Have you got the FDP data to back the Duplex Scans up?

DR. SCURR: No, and of course, until we finish this study, this is very premature, and we may not get another DVT for the next six patients and the incidence may come down, but I'm presenting this as the results are today. I suspect the true incidence is quite high. They are asymptomatic. The question is does it matter?

DR. BURNAND: Sure it matters I think is the answer to that.

DR. SOBEH: Obviously from previously what we heard is the incidence of symptomatic patients attended the hospital while most of John Scurr's patients are asymptomatic. So obviously the true incidence lies between the two figures.

DR. SCURR: I think that's a fair comment. My experience with symptomatic DVT's is we see on average two patients a week who get off an airplane with a DVT, and they are symptomatic, swollen leg, sometimes embolism.

DR. PARSI: Just out of curiosity, how does VCAM-I predicts the thrombophilic status?

DR. SCURR: Basically the hematologist who is on this project was given the opportunity of looking specifically at anything that was prothrombotic or may be of a useful indicator, et cetera, and the

three things he came up with were those. I'm not sure how that's going to help. I think the D-Dimer is probably the most useful indicator.

DR. BURNAND: It's interesting that there's a paper coming out from our department at St. Thomas next month in the Brochure on Thrombosis and Haemostasis which shows the VCAM is a very good predictor for DVT. So we'd go along with that.

DR. GUEX: May I suggest since we have three duplex machines in next room that everybody goes to the next room to be checked.

DR. OSMAN: In the rather hard-pressed NHS, I'd be interested to know where you got the funding to do this study.

DR. SCURR: Well, not in the hard-pressed NHS, is the simple answer to that. I've got a research grant which covered the cost of the duplex ultrasound scanning. We got another educational grant for the blood analysis, and the final thing is that one of the local private hospitals has agreed to do the actual screening. So a variety of sources, but not the NHS.

DR. KISTNER: Taking off on Dr. Guex, why don't we conduct an experiment right here. Let's all get a scan here at the meeting, and get one when you get home, and we will have a little experiment. We'll call it the Hawaiian PVS experiment, and invite you to come back to discuss the results. We're offering everyone a scan right here.

COULD PROLONGED AIR TRAVEL BE CAUSALLY ASSOCIATED WITH SUBCLAVIAN VEIN THROMBOEMBOLISM?

Theodore H. Teruya, MD
University of Hawaii,
John A. Burns School of Medicine
Honolulu, Hawaii, USA

Deep venous thrombosis (DVT) is much less common in the upper extremity than in the lower extremity. Axillosubclavian thrombosis has been reported to represent 1% to 2% of all venous thrombosis. The reported incidence of pulmonary embolism (PE) associated with axillosubclavian DVT has increased over time and ranges from 10% to 30% depending on the diagnostic tests used. "Effort thrombosis" of the subclavian vein (Paget-Schroetter Syndrome, PSS) is a condition commonly seen in young and otherwise healthy individuals, mostly men. This disorder has multiple etiologies. The most common cause is compression of the axillosubclavian vein where it crosses the first rib. This compression is caused by adjacent bones, tendons, and muscles at the thoracic inlet, facilitating venous stasis, thereby contributing to thrombotic events. Thoracic inlet syndrome is present in 80% of patients with PSS. Strenuous, repetitive shoulder-arm exercise is frequently reported prior to PSS. Injury is also an important cause of thoracic inlet syndrome and subsequent axillosubclavian thrombosis.

A number of patient-related risk factors for development of air travel-related DVT have been identified in previous reports. Very few air travelers suffering from DVT seem to be devoid of such factors. Increasing indications suggest that there is a relationship between prolonged air flight and *lower* limb DVT and subsequent PE. However, if this relationship is causal or not, is yet to be determined. When it comes to a possible causal association between air flight and *upper* extremity DVT, the issue is probably even more obscure. However, a number of the cabin-related risk factors may also affect the rheological and biochemical circumstances in the upper extremity. The pressurized air flight cabin represents a special ambience where passengers often are immobilized in cramped positions for a long time subjected to low air pressure with relative hypoxia and low humidity, which may cause dehydration, hemoconcentration, and subsequently a hypercoaguable state. This may, super-imposed to patient-related risk factors, play a role in precipitating venous thrombotic events.

Normally, hypoxia leads to increased pulmonary ventilation. However, immobility, drowsiness, or even sleeping might hinder proper respiration. This results in decreased oxygen saturation. The low air pressure and the relative hypoxia also reduce the endothelial fibrinolytic activity.

During a three-year-period, five patients with subclavian vein thrombosis were found having performed a prolonged flight in connection with or just before the onset of symptoms. All patients were examined with duplex scan and venography. One patient with PE as well was also examined with ventilation perfusion scan and pulmonary angiography. All patients had risk factors for DVT. Two patients had suffered clavicular fracture and a third had had a shoulder injury and DVT. One patient had atrial fibrillation and lung cancer. The last patient had a subclavian stenosis of unknown origin. Two of the patients suffered from PSS and in both cases, swimming was the most likely triggering factor.

It is not possible to draw any firm conclusions from this small and retrospective case study but the aim of this study was to draw attention to the possible causal relationship between prolonged air flight and subclavian thrombosis. However, further research is needed to settle this issue.

DISCUSSION

DR. BURNAND: I think one of the important things in the cramped seats you talk about is the fact that you lay on your arm for prolonged periods, particularly when you go to sleep. So if you've got an abnormality, this probably adds to it. This is obviously a much rarer problem than lower extremity DVT.

DR. LORD: I only wanted to say that on the long flight over I was observing my fellow passengers and no doubt they were observing me too, because I was thinking about the paper, and what I did notice is that almost all their movements are less than you would think. I don't know if it's a cultural thing or what, but they're not moving their arms much. They don't breathe very deeply. So five patients doesn't make a swallow in the summer or whatever, but nevertheless, it could be a genuine link.

DR. PARTSCH: As somebody has mentioned, a study coming from Innsbruck, Austria showed an increased frequency of cerebral sinus thrombosis after air-flights too. So this would fit very nicely to your study concerning atypical localization of thrombosis.

DR. ABU-BAKER: Why is the incidence of DVT higher in the lower limb compared to the upper limb? Is there a relationship between the valves and the length of the inferior cava system that can be the cause of this DVT?

DR. BURNAND: Do you want to make a hypothesis as to why upper extremity DVT is less common than lower? He says it's due

to the valves.

DR. TERUYA: Yes. I think that's probably true, and I think also there is venous pooling in your lower extremities is probably much more significant during air flight than in the upper extremity.

DR. BURNAND: I think we're going to try to pull this together for the last ten minutes or so. I've got some things written down that I'd like to sort of discuss with the audience and the panel. First of all, I suppose the simplest thing is not to fly. That's an option that you all have, but I can't see many people given the offer of a lovely week in Hawaii choosing this unless you're going to come by boat and that is going to take a rather long time. We've had very little discussion on the seats that are available. Now, one of the big things that British Airways said was that they're changing the style of their seats, yet the CEO of Hawaiian Airlines says tough luck, chaps. We're going to have to put up with these rotten seats forever. Can I have some comments from the panel about the airline seats? Do you not think we could come up with a better design for airline seats? My original thoughts were that we ought to have 747s turn into those Japanese hotels where you go to sleep inside a box, but I'm told that when passengers were approached by Virgin, they said it was too claustrophobic. Bo, what about the seats? Do you think we've got the answer altogether in the seats?

DR. EKLOF: I usually sleep when I fly. So I do all the wrong things you shouldn't do. The Swiss study about the changes in the popliteal vein enhances the importance of pressure from the seat against the popliteal space.

DR. BURNAND: Hugo, do you think we should be doing things to improve seat design and do you think seats are important? Is it the only way to fly in seats?

DR. PARTSCH: In these business class seats they are quite comfortable now.

DR. BURNAND: They're even better in first class, I can tell you.

DR. PARTSCH: But what you still have is the upright position with the stasis.

DR. BURNAND: Not in first class. You get to lie right down now. That's one of the advantages of first class. Couldn't they think about designing the aircraft differently? Is the CEO still here from Hawaiian? Can we get you back to the microphone for just a minute because I'm really keen on discussing airline seats in greater detail.

DR. LORD: While he's coming, I try not to fly economy, but when I do, I realize there's a giant conspiracy against the big man, just another manifestation of the midgets taking over the world. I think the passengers should be stratified by height. I see little people sitting in great big seats, and I can barely get into my seat.

DR. BURNAND: Upgrades for all the big guys. Is that what it is?

DR. CAPRINI: I think it's really important. I know United has done two things. They've now actually installed in their 757s a roomier forward section of economy class. There's more room for frequent fliers, and in first class now in the 777s they've got beds. I think that's a great move.

DR. BURNAND: Would you like to respond to that because you said commercially there was no hope for us in getting more room in seating. You've got to keep bottoms on seats in order to get the dollars into the airline.

MR. CASEY: I need to correct your comment. You were referring, I believe, to the design of the seat. I believe a lot can be done to design the seat.

DR. BURNAND: I'd like you to address specifically the design of the seat, if you could, with us.

MR. CASEY: Right. First of all, seat manufacturers design seats and airlines buy them, and they buy them based on the best deal they can get. So we don't design the seats, nor actually do we design the interior of the airplane.

DR. BURNAND: That's a cop out, if I'm allowed to say that.

MR. CASEY: Well, you can say that. The space between seats is an economic issue. The design of a seat -- I mean, the price for this seat versus this seat versus another seat is about the same. So if there can be some work done with seat manufacturers to design a seat that will not cause this problem, we'd be happy to buy them. Most airlines would, I believe.

DR. BURNAND: So your point was the room between the seats and the number that you need to get in, not the design of the seats, and you're prepared to pay a bit more if you could come up with a better designed seat.

MR. CASEY: Correct.

DR. BURNAND: Are there any other points that you want to bring to our attention having listened to the talks today that commercially make sense? Are you amazed at the 25 percent incidence of DVT that they're getting in the Middlesex?

MR. CASEY: I am amazed, but most of the previous presentations talked about people that had a predisposition to some kind of illness or they're overweight or whatever because everybody in this room is nice and slim so they don't have a problem. What I am struck by is there are many things that airlines can do. They can use their in-flight video. They can use their in-flight magazine. You can put a brochure together to address some basic things and not scare the hell out of people because as soon as you scare the hell out of people, the lawyers step in and will stop you from doing it. That's a big problem, the legal aspect.

DR. CAPRINI: Before he leaves the microphone, I just wanted to ask a question because one of the things that's been bantered about, and we've been one of those that's been bantering about it, is the use of a compression pump of some sort, a foot pump or a calf pump. Is that feasible in the airlines, let's say, as a pilot program in business and first class or are we talking about something that just is not feasible?

MR. CASEY: You know, I have no idea what a calf pump would look like, what it would weigh or how you would use it, but we're willing to look at anything that's commercially feasible. Making a buck in the airline business is tough.

DR. CAPRINI: Because there are a lot of people in this room who have shown quite elegantly in some cases that the dependent limb, if it's compressed either with a stocking or with a pneumatic device or both, you can get quite a flow out of that leg. So it seems to me that we're going in the direction of foot compression instead of providing beds to everyone on the airplane.

MR. CASEY: Yes. I think you really need to separate it into two categories, those that have some sort of predisposition and those people need to be gotten to way in advance. And by and large it's going to have to come from the medical community.

DR. BURNAND: Could we come back to talk about that now specifically because that's the next thing I wanted to dwell on, particularly with the panel members and audience. If you've now got someone who's going to go on a long airline flight and they were

over 50, and I'll include John Scurr in on this as well, would you recommend that they went out and got a thrombophilia screen before they went? If they could spend 30 pounds ($50) to get a thrombophilia screen, which is about what it costs at St. Thomas, would you recommend it?

DR. PARTSCH: We shouldn't lose the basis of common sense. Flying is an everyday situation today.

DR. BURNAND: 25 percent DVT.

DR. PARTSCH: 80 percent of our travel thrombosis occurs after car driving. We have a Vienna opera where a performance may take five hours or more. Do you have to screen all these people before they go to the opera or before they do long car driving? I mean, this would be unrealistic.

DR. BURNAND: I'm not sure whether that's important or not.

DR. CAPRINI: I think one thing is very important, and I'm biased about this, but this risk factor assessment, either the one that we develop or someone else develops. I think that everybody that's over the age of 50 should sit down and we ought to check off the boxes as to how many risk factors they have. And if they don't have many risk factors, then we don't worry about them, but if they have a bunch of risk factors, then we have to individualize how those patients are handled.

DR. BURNAND: But what do you say to the airlines when they say this is not a major risk for a fit healthy person. It's only if you've got a thrombophilia that you're really at risk. That is what seems to be coming out of the presentations that we've heard today.

DR. CAPRINI: I wouldn't agree with that. You've got other things like obesity, previous history of surgery, hormones, varicose veins. He still has his varicose veins. I mean, these numbers add up very quickly. You'd be surprised how often you can get into the high risk category if you just take a look at all these factors.

DR. LORD: Kevin, I don't think we should recommend anything drastic until we clarify if that study can be repeated. The 25 percent has really rocked most of us on the panel. If that's true, then all the other things follow.

DR. BURNAND: No, I agree. We need some better bigger prospective studies which I think has definitely come out of today's work.

DR. ABU-BAKER: We have heard about all the risk factors with flying. What are your recommendations to avoid coach-class DVT today?

DR. BURNAND: I think that's a point that Joe has been making repeatedly over the course of today.

DR. CAPRINI: Take low molecular weight heparin. Make sure you get into 30 to 40 millimeter stocking. Make sure you take deep breaths, drink lots of fluids, get a bulkhead seat, move your legs around. I mean, all of these things, until we get hard data, they just make sense.

DR. MARCUSON: Would it be so terrible if you actually put the price up in coach class and had a bit more room?

MR. CASEY: I would be delighted to charge more and give people more room. The problem is people won't pay more.

DR. BURNAND: I thought that was the commercial answer.

MR. CASEY: It's not a commercial answer. It's reality.

DR. SCURR: One point, when you go abroad, if you go to Africa you take malaria prophylaxis. You have your injections. So why not just have an injection of subcutaneous heparin and wear elastic stockings? I was just going to direct one question at Hugo Partsch because I seem to recall that the Austrian physicians at one stage were all taking subcutaneous heparin. Do you remember that, Hugo, or can you comment on that?

DR. PARTSCH: We recommend it only for the higher risk group as we define it for people with high risk.

DR. BURNAND: It seems to me that we recognize the fact that thrombophilia is a major risk factor, yet no one on the panel wants to provide screening for thrombophilia. I think personally they're wrong, and I think that in years to come we all will get a thrombophilia screen done. I certainly would be very happy to get my thrombophilia screen done at some point because I think it's going to be important and I think it will be popular. We now go on to the fact of prophylaxis and whether we can suggest any additional measures outside of the straightforward ones, about wearing stockings. Should we be taking some form of pharmacological prophylaxis, and it seems to me that you're only recommending that from the panel for high-risk patients. Is that correct? Pharmacological treatment only for high-risk patients? Would you recommend heparin in any shape or form for anyone other than high-risk passengers travelling on airline flights? No. What about aspirin as an alternative? Do people take an aspirin before they go on a flight? How many people wear compression stockings on an airline flight? (many hands raised.) Well, that's very interesting, isn't it? That's fascinating. That's the answer maybe. I mean, the real message seems to be that perhaps at least we should educate the airlines to give out anti-embolism stockings which has the advantage that it is a straightforward thing that would cost very little and we should perhaps publicize this. Hugo wants to make one other point.

DR. PARTSCH: I would like to discuss that Class I stockings would not be enough because these stockings are designed for the recumbent patient. In the sitting position these stockings are too weak to decrease the blood-volume of the lower leg to a considerable extent. This can easily be shown by APG, for instance. We have published this recently in Dermatologic Surgery that you need higher pressure and inelastic material if you want to get significant decrease of volume.

DR. SCURR: That's wrong, Hugo. In fact, nobody in the stocking group got a DVT, zero percent.

DR. BURNAND: But you haven't got big enough numbers to make any sensible comments on that.

DR. CAPRINI: The one point I was trying to make about that before and I didn't get it out right was that it doesn't make sense to put something on the leg which is less than the ambulatory venous pressure, especially in the patient at higher risk the way I categorized it. And, Hugo, if you get a 40 millimeter stocking, that's higher than the normal ambulatory pressure, and there you have a chance to increase flow out of the leg.

Continues on the next page

A Prospective Evaluation of the Risk for Venous Leg Thrombosis Associated with Prolonged Air Travel: A Pilot Study

Berndt Arfvidsson, MD, PhD
Visiting Colleague, Department of Surgery,
University of Hawaii,
John A. Burns School of Medicine
Honolulu, Hawaii, USA
B. Eklof, MD, PhD, R.L. Kistner, MD, T. Ogawa, MD, PhD, K. Parsi, MD

Introduction

Prolonged air travel has been associated with increased risk for venous thromboembolism (VTE) for many years but it has not yet been determined if there is a causal relationship. Numerous reports have appeared on this issue but most are very small series or case reports. Since all published reports are retrospective, very little is known about the incidence of this potentially life-threatening complication.

Every year, more than 6 million travelers arrive at the Honolulu International Airport. Air travel to Hawaii takes at least 5 hours and most passengers have been traveling much longer. Thus, Hawaii is an appropriate place to perform a study on VTE associated with prolonged air travel. Approximately one third of all published cases of air-travel related VTE have been diagnosed in Honolulu, Hawaii.

To learn more about the incidence of this condition, prospective studies are needed. These studies would ideally start with duplex scan screening of air flight passengers before the long flight, and the duplex scan should then be repeated soon after the flight. It would be difficult to accomplish such a study on general passengers, as they will quickly disperse in various directions after the flight. However, in a confined group of travelers this could possibly be accomplished.

Material and Methods

During five days in November 1999, the Third Pacific Vascular Symposium On Venous Disease was held on the island of Hawaii. The meeting contained a group of phlebology minded physicians, some of them with spouses, and a number of representatives from the medical industry, altogether around 250 people. Three companies were demonstrating their latest color flow duplex scanners to the participating physicians. There were also experienced sonographers performing duplex scans on those who wished to be examined.

Stimulated by a presentation by John Scurr of London on travel related VTE on the second day of the meeting it was proposed that as many participants as possible be prospectively examined with leg duplex scan before the return flight. The study could be continued with a repeat duplex scan at the place of residency when the participant returned home. The same evening the idea was hatched a study protocol was adopted, mainly focusing on individual-related risk factors, and the next morning the study was launched. During the following three days, 83 participants were examined with venous duplex scan of both legs, to search for venous thrombosis. The sapheno-femoral junction, the confluence of the deep and common femoral veins, the superficial femoral vein, the popliteal vein as well as the sapheno-popliteal junction, and the calf veins were examined. No pulmonary diagnostics were done. The participants filled out the study protocol.

Results

In the first round of duplex scans, i.e. during the symposium, 83 participants representing 166 legs were scanned with duplex. There were 71% men and 29% women. The mean age was 52 years (range 25-80). Eighty-nine percent were 40 years or older. The age distribution is shown in Table 1. The occurrence of individual-related risk factors associated with deep vein thrombosis (DVT) are shown in Table 2. Sixteen participants were found to have a relevant risk factor, but no participant in this series had more than one risk factor. Thirty-one percent of the travelers reported that they had used in-flight compression stockings. No case of leg DVT was recorded in this duplex scan round.

Repeat duplex scan after the return flight home was planned to be performed within two weeks but because of the low number of scan reports returned after two weeks, the follow up period was extended to four weeks. Within this period, 49 repeat duplex scans were reported. One of these scans revealed a small mural thrombosis in the superficial femoral vein. This thrombosis was not seen on the primary scan. The thrombosis is shown in Figure 1. The participant suffering from this event reported that the thrombosis had given no clinical symptoms. This passenger had no known risk factors for DVT. The repeat scan was performed on the 11th day after the flight home. This was the only evidence of thrombosis seen in the 132 scans, and it was limited to a single focal non-occlusive thrombus. Another duplex scan was performed on the 29:th day after the flight home showing that the thrombus had almost vanished. The mean flight time prior to these examinations was nine hours in each direction (range 5-21).

Discussion

This pilot study was based on the fact that a relatively great number of physicians interested in venous disease were gathered for a short period of time in a venue temporarily equipped with three color flow duplex scanners and a number of experienced sonographers. Most of the physicians were expected to arrange a follow up duplex scan for themselves and their spouses after homecoming. Relatively few participants had specific risk factors for thrombotic disease, only 16 of 83, and no one had more than one risk factor. Age is an important risk factor for DVT. The age distribution is detailed in Table 1. The mean age in the present series was only 52 years. In three other studies with patients suffering from air-travel related VTE, the mean age varied from 56 to 63 years.[1-3]

The first duplex scan round, i.e. the scans performed during the symposium, within one week after arrival by air, served both as an initial post-flight examination and also as a primary screening before the return flight. The average flight time experienced prior to this examination was nine hours.

Forty-nine of 83 participants, (59%) reported the result of a repeat scan upon return home. This second round of scans revealed one mural deep venous lower extremity thrombosis, after two prolonged air flights within one week. This DVT was asymptomatic. This series might be regarded as 132 post-flight duplex scans resulting in one single case of DVT. This result may indicate that the air flight itself may have little impact on the risk for DVT, at least in healthy individuals, and that the thrombosis development associated with prolonged air travel requires other precipitating individual-related risk factors.

It is possible that small asymptomatic DVTs are common. They might be spontaneously lysed at the place or embolized into the lungs and lysed there without clinical symptoms. A thorough duplex scan is needed to detect such small thrombi.

Since the present study was not designed in advance there were no facilities available for blood tests at the venue. A majority, 69% did not use in-flight compression stockings.

An abstract from Scurr et al[4] described a prospective study that will include two hundred passengers 50 years or older without known thromboembolic disease and without specific risk factors for DVT. The passengers will be examined by duplex scan before and after flights of eight hours or more. Blood will also be taken for markers of a hypercoagulable state. The passengers will be randomized to use or not use in-flight compression stockings.

The single conclusion on the incidence of air travel-related venous thrombosis that might be drawn from the present pilot study is that future prospective studies will have to include large samples to establish the magnitude of air travel related VTE. With the reports of a possible relationship between air travel and VTE, passengers need to be properly informed about the risks and advised how to avoid unwanted complications.

Acknowledgement

We acknowledge J. Jerome Guex, Nicos Labropoulos, Darcy Kessler, and Steve Mun for their skillful duplex scannings.

References

1. Eklof B, Kistner RL, Masuda EM, et al. Venous thromboembolism in association with prolonged air travel, *Dermatol Surg.* 1996;22:637-41.
2. Ribier G, Zizka V, Cysique J, et al. Venous thromboembolic events following air travel. A study of 40 cases diagnosed in Martinique, *Rev Med Interne.* 1997;18:601-4.
3. Arfvidsson B, Eklof B, Kistner RL, et al. Risk factors for venous thromboembolism following prolonged air travel: a prospective study, *Vasc Surg.* 1999;33:537-44.
4. Scurr JH, Coleridge Smith PD, and Machin S. Deep vein thrombosis in airline passengers - the incidence of deep vein thrombosis and the efficacy of elastic compression stockings (abstract). Presented at the Third Pacific Vascular Symposium on Venous Disease, Hawaii, 1999.

Table 1.— Age distribution in 83 long haul flight passengers

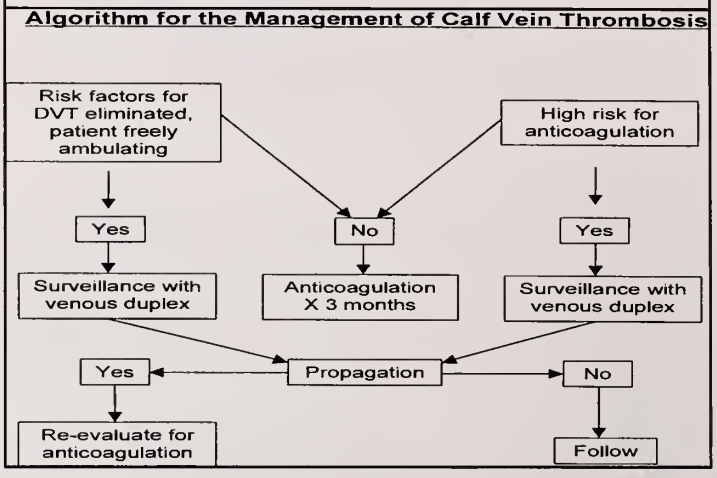
Years	No. of passengers
20 — 29	3
30 — 39	6
40 — 49	22
50 — 59	28
60 — 69	17
70 — 79	6
80 — 89	1

Table 2.— Risk factors associated with development of venous thrombo-embolism in 83 long haul flight passengers

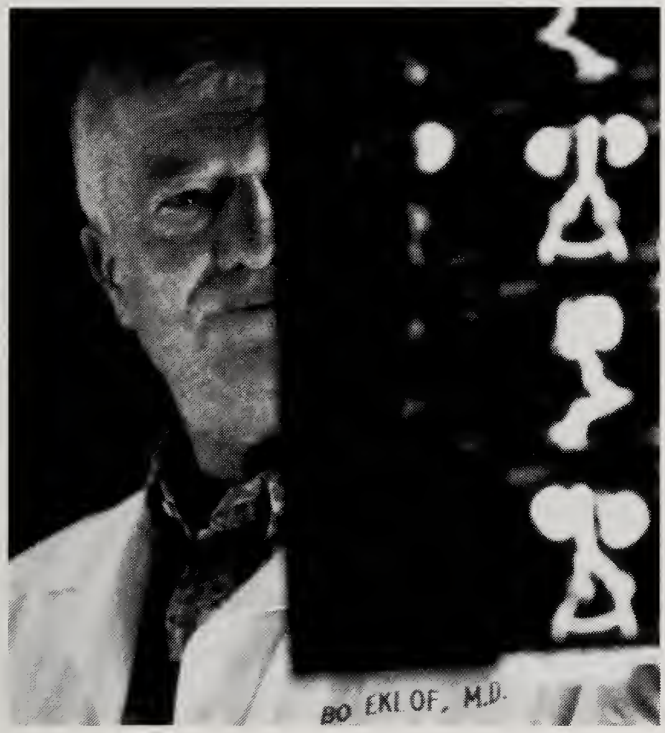
Risk factor	No. of passengers
Peroral estrogen medication	6
Malignancy	**3**
Previous DVT	2
Previous superficial thrombophlebitis	2
Atrial fibrillation	2
Recent surgery	1
	16

Legend

Figure 1.— Duplex scan showing an asymptomatic mural thrombus in the right superficial femoral vein of a 57 year old male flight passenger. The duplex scan was performed 11 days after the 21 hour return flight.



Join us in the quest for continued medical excellence.



Join your Straub colleagues as we strive for continuing medical excellence.

Straub Clinic & Hospital, Inc. is accredited by the Hawaii Medical Association to sponsor continuing medical education for physicians.

Straub designates this educational activity for a maximum of one credit hour in Category 1 of the Physician's Recognition Award of the American Medical Association. Each physician should claim only those hours of credit that he/she actually spent in the educational activity.

Straub

Partners in health

*straub*health.com

You are invited to attend...

– Friday Noon Conference –

Herbal Antiinflammatories

Theresa C. Danao, MD

April 28, 2000, 12:30 - 1:30 p.m.

Doctors Dining Room

Learning Objectives

At the conclusion, participants will be able to:

- Identify the major phytopharmaceuticals marketed as OTC products for the control and alleviation of inflammation.
- Summarize the double blind, placebo controlled studies involving theses agents.
- Intelligently advise patients on the phyto-products, their indications, their side effects, and their potential interactions with prescription drugs.

Friday Noon Conference – Luncheon

Pitfalls in the Diagnosis of Headache

Mark W. Green, MD

May 12, 2000, 12:30 – 1:30 p.m.

Doctors Dining Room

Learning Objectives

At the conclusion, participants will be able to:

- Gain knowledge to distinguish those headaches which are symptomatic or serious underlying medical conditions from the primary headache syndromes.
- Recognize the importance of making an accurate diagnosis and to initiate effective treatment.
- Understand the different treatment options available.

We would like to acknowledge the Educational Grant from Cerenex Pharmaceuticals/Glaxo Wellcome

Friday Noon Conference – Luncheon

Using Beta Blockers to Treat Heart Failure

Roger White, MD

May 19, 2000, 12:30 - 1:30 p.m.

Doctors Dining Room

Learning Objectives

At the conclusion, participants will be able to:

- Describe the pathophysiology of congestive heart failure.
- Summarize clinical studies on heart failure.
- Understand the rationale for using beta blockers early to reduce long term mortality of congestive heart failure.

We would like to acknowledge the Educational Grant from Smithkline Beecham

Please call Fran Smith at 522-4471 for more information.

HAWAII PROVIDERS NETWORK, INC.

An Organization Established to Bring Justice to the Health-Care Industry

2101 Nuuanu Avenue, Suite 1201
Honolulu, HI 96817
Phone and Fax 808-566-6665

This letter has been received from the Hawaii Medical Association

HAWAII MEDICAL ASSOCIATION

1360 SOUTH BERETANIA STREET, HONOLULU, HAWAII 96814
TELEPHONE (808) 536-7702 • FAX (808) 528-2376

March 9, 2000

Dear Hawaii Health Care Provider,

As most of you know, Hawaii Medical Association is a voluntary organization consisting of approximately 1650 Hawaii physicians. Hawaii Medical Association was founded in 1856 and its goals include maintenance of high quality health care services to members of the Hawaii community and expansion of such care to everyone.

In the past few years, the HMA as well as most Hawaii health care providers have experienced increased concern regarding various developments that seem to interfere with our efforts to achieve our goals. When appropriate, it is HMA's intention and desire to bring such developments to the attention of the medical community.

HMA has recently reviewed the No-Fault Project initiated by Hawaii Provider's Network. The project is designed to correct certain inequities that have encroached upon the ability of health care providers to provide quality services to No-Fault patients. HMA supports Hawaii Providers Network's No-Fault project and urges all Hawaii health care providers to do likewise.

Very truly yours,

James Lumeng

James Lumeng, M.D.
President
Hawaii Medical Association

FYI

The Hawaii Skin Cancer Coalition will be sponsoring a Skin Cancer Prevention Fair on May 28, 2000 from 11:00 am - 3:00 pm at Windward Mall. There will be free skin cancer screening by the Hawaii Dermatological Society, educational exhibits and games and prizes for the keikis. Local sport figures will be present to talk about the importance of sun protection in the prevention of skin cancer. For more information, please call the American Cancer Society at 487-8420.

Janssen Pharmaceutica

Is proud to support the Hawaii Medical Journal

World leader in antimycotic research

JANSSEN • PHARMACEUTICA • • RESEARCH FOUNDATION •

Titusville, NJ 08560-0200

®1998 Janssen Pharmaceutica

Aloha Laboratories

...when results counts

A CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

- **Surgical Pathology**
- **Dermatopathology**
- **Cytopathology**
- **Gynecologic Pathology**
- **Frozen Sections**

David M. Amberger, M.D.
Laboratory Director

2036 Hau Street, Honolulu, HI 96819
Phone (808)842-6600
Fax (808)848-0663
ALOHALABS@WORLDNET.ATT.NET

Arleen D. Jouxson, Esq.
Attorney at Law



A.K.A. Arlene Meyers, MD, MPH

- **Wahiawa pediatrician since 1979**
- **Associate Clinical Professor, JABSOM**
- **1998 Roscoe Pound award winner in health care law**
- **President & founder of the Hawaii Coalition For Health**

NEED HELP?

- **with Par. Agreements?**
- **Understanding health care laws?**
- **Resolving disputes with health insurers?**

CALL 621-8806 (Oahu) for more information or for a free initial consultation at your place of business.

302 California Ave., #209, Wahiawa, HI 96786, Ph: 621-8806; Fax: 622-5599

News and Notes Henry N. Yokoyama MD

Life in These Parts...

Roseline K. our proud, happy, adorable 82 yr old Chinese-Hawaiian grandmother says, "Whenever I dream about a mango or guava tree fruiting, I call up my children to see who is pregnant"... The fruit dreams have accounted for 57 grandchildren, 86 great grandchildren and 15 great great grandchildren all living and well...

Potpourri I

Quotable Quotes: "Mobile phones are the only subject on which men boast who's got the smallest..."

Neil Kinnok

Limericks:

A girl with acute Shigellosis
Said, "I've got an obscure diagnosis
I've sat and I've shat
Till I'm blue as my hat
And they still won't give me a prognosis...

Dr. Valerie Gilbert

A Miracle Cure (Condensed Version) John Cocker MD Editor "Stitches"

(John recalls his medical training days...)

The first overt surgical act that the student performed at St. Bartholomews (Free hospital in London) was the draining of hydroceles... There was a cadre of aged, infirm men who came to the outpatient department every few months to have their hydroceles drained...

One day I was on duty when a little old man, bent forward at the waist came limping in on the arms of a nurse.

We sat him on the table and carefully laid him back. As a veteran of the procedure, he waited with misplaced confidence, unaware of the miracle that was about to be performed.

His pants were pulled down, exposing a grapefruit sized scrotum. The skin of the scrotum was somewhat excoriated...The skin prep those days was CETAVLON. but this particular day, the bottle was empty. So we looked around and found another skin prep – ETHER.

Pouring a liberal amount of the ether in a dish, I dipped a swab and placed the dripping swab on the excoriated scrotal skin.

The effect was remarkable... The little old man, formerly bent and crippled, straightened up, hit a high C and cried, "Oo-oo-oo-oo" He leapt off the table, pulled up his pants and ran out of the room, clutching his genitals... He disappeared with the speed of an athlete still wailing "Oo-oo-oo-oo" a sound that faded into the distance like a police car driving away...

He was never seen again, and I have seen such an effective or rapid cure for arthritis...

Medical Tib Bits I

Andro Strikes Out: Good thing Mark McGuire stopped taking 300mg of Andro daily... The over the counter supplement used by the slugger for his 70 home run season raises testosterone and estrogen levels. In men, elevated testosterone lowers HDL, in women, causes beard growth, male pattern baldness and in kids premature puberty...

Wort-Less: The popular herbal anti-depressant St. John's Wort interacts with two medications: the anti-rejection drug CYCLOSPORIN (Used in organ transplantation) and the protease inhibitor INDINAVIE (used to treat AIDS)

Potpourri II

"When I press my forehead with my finger, it really hurts," a patient complained to his doctor. "And when I do the same to my cheek, it's also painful. Even if I press my stomach, I suffer. What can it be?"

Stumped, the physician sent the patient to a specialist.

The man returned to his doctor the following week. "What did the specialist say?" asked the doctor...

"I have a broken finger."

George Russell

One Sunday, the minister played hooky from church so he could play golf, leaving his assistant to conduct the service. He drove to a far away golf course to avoid bumping into any parishioners.

Looking down, St. Peter said to God, "You're not going to let him get away with this, are you?"

The lord shook his head.

The minister took his first shot and scored a 420 yard hole in one. St. Peter was outraged. "I thought you were going to punish him!" he said to the Lord.

The Lord looked at St. Peter and replied, "So who's he going to tell?"

Claire Parker

Medical Tid Bits II

Alzheimer Research: In Nov. Amgen (a biotech company in Thousand Oaks, CA) declared that its researchers have identified the enzyme beta-secretase which causes toxic protein fragments to accumulate in the brain...

Scientists have assumed that beta-amyloid protein fragments are carved out of a bigger, benign protein by two enzymes, beta-secretase and gamma-secretase which act like chemical scissors.

Amgen's team looked for the gene that prompts production of the beta-secretase. This discovery will spur efforts to identify inhibitors which can render the enzme impotent...

Fertile Findings: A six year study shows that survival rates of early stage ovarian cancer in the premenopausal women are the same with or without early, immediate surgery. Researchers say it may be possible to preserve the young woman's fertility without routine early surgery...

Optimists Live Longer: A 30 year study shows that folks with a positive perspective live 19% longer than pessimists. The optimistic attitude strengthens the immune system or inspires people to take better care of themselves...

Silent & Deadly: Feb meeting of the American Stroke Association's 25th International Conference in New Orleans reported on a new study: The incidence of strokes which declined in the 1960's and 70's is rising again... In 1999, there were 750,000 full fledged strokes and 500,000 TIA's... (TIA's or mini strokes last from a few seconds to 24 hours and rarely cause permanent damage, but are precursors of major strokes.)

A study by the National Stroke Association indicates that 2.5% of all adults age 18 and over (4.9 million people) have experienced TIA's. Another 1.2 million over age 45 have suffered a TIA without realizing the subtle symptoms:

a). Numbness or weakness of the face, arm or leg esp on one side
b). Trouble seeing in one or both eyes
c). Confusion and difficulty speaking or under standing
d). Difficulty walking, dizziness, or loss of coordination
e). Severe HA with no known cause...

Researchers have listed the following key indi cators:

a). Age over 60
b). Symptoms lasting more than 10 minutes
c). Weakness
d). History of diabetes...

Recommendations are:

a). Quit smoking
b). Limit alcohol to 1 to 2 drinks/day
c). Increase physical activity...

Potpourri III

Autopsy?: I do coronary angiograms which are popularly known to the patients as "dye" tests. One of my patients who was hospitalized with chest pain asked me when I was going to do this "test" and presented a sheet of paper with "die test" written...

Dr. S.U. Mecci

Just the Pits: One evening while I was the intern in ER, a young girl was brought in by her mother who was concerned the little girl might have a foreign body in her nose. With some difficulty, we managed to find and extract a foreign body. On close examination, it was determined to be an olive pit.

I couldn't resist asking the obvious question: "Why did you shove an olive pit up your nose?"

She looked at me squarely and nonchalantly replied, "Because the olive wouldn't fit."

Dr. Tom Kerlow

Medical Tid Bits III

Colon Cancer Survival: Postop colon cancer patients with liver mets survive better with cancer drugs delivered directly to the liver with implanted pumps. A study of chemotherapy with pump showed a 85% 2 year survival compared to 72% on standard chemotherapy...

Cancer Conundrum: Nearly 65% of U.S. cancer

patients are 65 or older, but only 25% of these older patients are enrolled in trials of new cancer treatments.
Reasons:

a). Medicare doesn't reimburse the cost of experimental procedures
b). Older patients have heart disease, diabetes, etc. making them too frail for aggressive new therapies.

Gone to Pot: A new report suggests that smoking marijuana once a day for several years may double the risk for developing throat and neck cancers. Add cigarette smoking and the odds shoot up 36 fold.
Air on the Safe Side: Researchers found that upping oxygen during surgery cuts the incidence of wound infection. The added oxygen helps WBC's fight off bacteria. The same researchers found that upping the oxygen halves the rate of postop vomiting and nausea...

Potpourri IV

Basic Anatomy: While making rounds at a nursing home, I was asked to see a Mrs. Jones... The nurses explained to her that the doctor was here to look at her bum and see if anything can be done.

I assumed that Mrs. Jones was perhaps an Alzheimer patient and that I should keep my explanation simple. After asking her to roll over, I examined her sacral area and saw a good sized ulcer.

"Mrs. Jones, you have a hole back there," I said.

She promply looked up at me and replied "So do you!"

Arsenem MD, (Stitches)

Ah, Sigmund!: During my busy office hours, a druggist called me to discuss one of my prescriptions.

"Doctor, would you please tell me exactly what you prescribed for Miss Thompson?"

I looked at my file and declared, "She received CLINORIL for her lumbago."

"What's written on the prescription?" I asked.

In a low embarrassed voice, he said, "You prescribed clitoris twice a day."

In medical life, sometimes the subconscious plays a role in our prescribing...

Dr. Real Major

Medical Tid Bits IV

Seize This: FDA has cleared TRICEPTOL, a new drug for kids and adults who suffer from partial seizures (the most common type of epilepsy.) Trileptol can be combined with other drugs or taken alone...

E-Gad!: Vit E may not help the heart after all. A double blind study of 10,000 high risk patients (who already had an MI or stroke) concluded that 400 I.U. of Vit E didn't work any better than a sugar pill in preventing subsequent heart trouble...

Digital Mammogram: The FDA approved a new GE manufactured digital mammogram. The digital mammogram is easier to manipulate, and suspicious areas can be enlarged or reduced to enhance contrast...

Lyme Legacy: A 10 year follow up study of Lyme disease indicates that the tick-borne illness can sometimes cause debilitating pain, but the majority of Lyme sufferers don't wind up with any more numbness, fatigue or neck pain than those not touched with the disease...

Oral Hygiene: HIV can be transmitted though oral sex. A San Francisco study of men who only engage in oral sex showed a 8% incidence of new HIV infections...

Wee Ones: Infants born less than 5.5 lbs at 40 weeks are less likely to hold managerial or professional jobs and on average earn 10% less than those weighing more at birth...

Potpourri V

My father-in-law had prostate surgery. We took him to the hospital at 7:30 am and he was operated on at 8:00 am. We were amazed when the hospital called at noon to tell us he could go home.

Two months later, our beagle Bo also had prostate surgery. When I took him in, I asked the vet what time I should pick him up. "My father-in-law came home the same day."

The vet looked at me and said, "Bo's not on Medicare."

Clyde Dyak

When I was single, I played tennis at an island resort, riding the ferry almost everyday. One summer, a handsome second mate started working on the boat and we would sometimes talk during my trip.

I was traveling with my coach and two players when the captain handed me a note from the new mate. He was asking me to call him and wrote down a phone number. I then looked up to see three intensely interested spectators. A bit flustered, I blurted out, "He wants to learn how to play tennis and in return he says he'll teach me how to mate."

Felicity Barrington

Medical Tid Bits V

Gulf War Syndrome: Pyridostigmine Bromide (PB), an anti-nerve gas antidote is being investigated as a source for Gulf War Syndrome. The Defense Dept reported that 250,000 troops were administered and PB "cannot be ruled out" as the contributor to the dizziness and weakness reported by 100,000 men and women who served during the 1991 war...

PB has been used since 1955 to treat myasthenia gravis; it inhibits the nerve regulating enzyme acetylcholinestrase and causes muscle spasms, weakness and other symptoms, but the effects are considered reversible according to the study author Dr. Beatrice Golomb of the San Diego VA Medical Center...

A new book, "Second Opinions" by Jerome Groopman of Harvard Medical School endorses second opinions: "Dealing with uncertainty is difficult for everyone, including doctors." "We all want to believe in the 'perfect solution'."

"A second opinion should include a second physical exam and a review of the original pathology slides and other tests..."

But Groopman also says, "Don't overdo your search... Sometimes if you find yourself looking for a 3rd, 4th, 5th or 6th opinion. What you're really doing is running away from the truth."

Stay Fit: A 16 year study of 85,000 nurses published in Archives of Internal Medicine (Nov) shows that women who spend 7 hours/week or more in moderate exercise lower their risk of breast Ca 20%. Researchers feel that exercise lowers the body estrogen which stimulates breast cell growth...

Classified Notices

To place a classified notice:

HMA members.—Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.

Nonmembers.—Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Office Space

ALA MOANA BLDG.— PHYSICIANS WANTED to share space and support services. Interest in physical rehab. preferred. We have flexible rental arrangements starting at one half-day per week . Run your practice with no fixed overhead. Contact Dr. Speers, REHABILITATION ASSOCIATES, 955-7244.

Wanted

PSYCHIATRIST.— Kaneohe residential Program for adolescents seeks consultant two half-days per month. Schedule, duties, compensation negotiable. Contact Administrator: RAINBOW HOUSE 239-2399.

Seeking Employment

INTERNIST.— Internist seeks opportunity in INTERNAL MEDICINE / PRIMARY CARE. Any Island. Excellent clinical skills and references. Extensive tropical medicine, critical care and geriatric experience. E-mail: brycemd@hotmail.com

BOARD CERTIFIED Family Practitioner with working experience in Hana and Hilo available for summer practice coverage. Please contact: VADIM BRASLAVSKY, MD Telephone: (913) 685-7494

BOARD CERTIFIED Family Practitioner, 1995 UH graduate available for short term practice coverage. Please contact: CATHERINE ARROYO, MD Telephone: (316) 424-1668

The Weathervane Russell T. Stodd MD

WAY TO GO, SUSAN AND JORGE!
Telemedicine is an almost magical way of real time sharing of difficult medical problems. By communicating with computer videoconferencing it is possible for physicians hundreds of miles apart to share in handling rare and challenging disorders. Use of this modality is expanding almost exponentially. Recently, two of our esteemed HOS colleagues, Susan Senft, M.D. in Kamuela and Jorge Camara, M.D. in Honolulu, combined their talents to remove an orbital tumor from a patient in north Hawaii. Susan's surgical skill in excising the mass was enhanced by Jorge 200 miles away in Honolulu, observing and assisting with computer generated images seen via PictureTel's Concord 4500 video conferencing package. Of course, legal issues must be confronted, such as licensure across state lines (no problem in this case), medical liability, and insurance reimbursement, but the science will surely expand as the technology improves. Congratulations to two of our own on the cutting edge.

LANGUAGE WAS DEVELOPED TO SATISFY OUR DEEP NEED TO COMPLAIN.
We are all familiar with the old joke about a student's handwriting being so bad, he/she is headed for a medical career. Very funny, except when it isn't. A jury recently ordered a doctor to pay $225,000 in damages to the family of a man who died after receiving the wrong medication. The patient needed a drug for angina (Isordil), and instead the pharmacist supplied a blood pressure drug (Plendil). Not only was it the wrong medication, but the daily dose was higher than that recommended. The patient had a heart attack the day after starting the drug and died two weeks later. State law requires the pharmacist to call the doctor if any part of the prescription is not clear, but that was not done in this case. The pharmacy was on the hook with the doctor, and decided to settle out of court.

WAITING FOR AN INHERITANCE? TYPE IN WWW.KILL GRANDMA. PBSTV.ORG.
Oregon continues to lead the nation in helping suicidal patients. Now a video entitled "Final Exit" has been produced as a guide to committing suicide. Author Derek Humphry claims his goal is to help desperately ill people and their loved ones, especially those not accustomed to getting help from books or libraries. The video was aired twice on public television. Gregory Hamilton, M.D., a Portland psychiatrist who opposes assisted suicide, stated that the television show serves as a covert suggestion that suicide is okay, and people who are on the edge could be pushed over.

THIS SONG IS FOR ALL YOU DOCTORS OUT THERE, "I'M SORRY I STABBED YOU." Cathy
The new editor of the Journal of the American Medical Association (JAMA), Catherine D. DeAngelis, MD, generated some heat when she published a study allegedly indicating that nurses did just as well as physicians when treating certain conditions. The editor claimed that the article was newsworthy, and did not say that nurse practitioners are as good as doctors, however that is the tone of the piece irrespective of her protestations. She claimed that good studies stimulate debate, especially those that relate to trends in current practice. Thanks a lot, doc. Since many, many patients improve without medical intervention, it follows that any kind of care will often prove beneficial. A useful study? I don't think so. At a time when legislatures are beset with bills allowing pretenders to practice medicine, it is hard to see how this report serves to enhance the definition of physicians.

WHATEVER PLAN YOU MAKE, THERE IS A HIDDEN DIFFICULTY SOMEWHERE.
The sudden death of a teenager at the University of Pennsylvania was directly linked to a gene-therapy trial. Gene therapy is alleged to be the wave of the therapeutic future, but that future is getting more cloudy as research continues. Congressional inquiries turned up the fact that a letter was written by an NIH official in 1996, telling researchers they didn't have to submit certain data about their work to the NIH, even though the rules required them to do so. That official later left the NIH to work at the University of Pennsylvania. Experts estimate that hundreds of patients in gene-therapy trials have died, but supposedly those deaths are largely related to the patient's underlying illness. Now, not only has it been found that researchers have not reported deaths and other adverse events in violation of NIH rules, but some researchers have been criticized for ties to for-profit companies, and may be rushing clinical trials. The NIH is looking at financial ties that could influence the proper design of a gene-therapy program.

IF IT DOESN'T WORK, EXPAND IT!
The National Practitioner Data Bank (NPDB) continues to generate controversy. Theoretically, the data bank was created to have an ongoing confidential record of physicians who lose or settle malpractice suits. Some doctors have found a way to avoid the bank by negotiating settlements in the name of their hospital or practice instead. Now the Health Resources and Services Administration (HRSA) wants to close that loophole by requiring insurers to report the name of any doctor involved in the care of a patient that later became the basis for a lawsuit, even if the doctor hadn't been named as a defendant!! Also, Rep. Tom Bliley (R-VA) wants to make the data bank accessible to the public, because he is angry at the AMA for supporting the Democrat-sponsored patient protection act. He wrote to Secretary Shalala, "I believe that the availability of such data is vital for consumers to make informed decisions in choosing their health care providers." And many doctors think Republicans are their friends!

A HOUSE IS JUST A PILE OF STUFF WITH A COVER ON IT.
There is an alarming increase in asthma and other allergy rates in this country, and the dust mite is believed to be a common culprit. The problem is that dust mites thrive in carpets, overstuffed chairs, and cushy bed comforters, and blown-up pictures of these bugs send even the most skeptical consumer running for help. Tapping into consumer fears, marketers have come up with a collection of devices in the war against dust mites. Hoover vacuum claims to make an expensive cleaner that sucks up mites; Proctor and Gamble sells an "electrostatic" wipe to remove dust. All detergent claims it will rinse the mites out of clothes. Gazoontite.com offers thousands of products aimed at the breathing market, and researchers are working on pesticide sprays. Allergists recommend removing sources and controlling the environment as the most effective way to combat dust mites, but meanwhile the marketers are busy moving allergy into the mainstream with ads, medications and promises.

YOU HAVE TO STUDY A GREAT DEAL TO KNOW A LITTLE.
In a 1976 decision the National Labor Relations Board ruled that house staffers are "students" not employees, and therefore cannot organize. Now, the NLRB, responding to a petition filed in 1997 by residents at Boston Medical Center, said that house doctors are employees, thus granting collective bargaining rights to more than 90,000 interns, residents and fellows working in America's hospitals. The Association of American Medical Colleges has taken issue with the decision, stating that the decision erodes the principle of professionalism in medicine. AAMC President Jordan Cohen claimed that giving students the right to strike is incompatible with the medical education process which should not be driven by the marketplace. Sorry about that, Doctor Cohen, but the singular attitude of medicine as a cherished profession that we grew up with, is fast disappearing.

ADDENDA
❖ Most humans blink about 15 times a minute. Blink frequency decreases with concentration, and ceases completely when auto drivers pass other vehicles at high speed or when aircraft pilots are taking off.
❖ 19th century Scottish law required brides to be pregnant on their wedding day.
❖ Sport stars make great role models, especially if you are thinking about a career in crime.
❖ "Menage a trois" is a French phrase. It means Kodak moment.
Aloha and keep the faith —rts■

One of a kind.



Unmistakable.

At MIEC, we know what it means to stand out in the crowd. Twenty-five years ago, we started the West's first doctor-owned, not-for-profit malpractice insurance company. The idea quickly caught on, and now there are dozens of "doctor-owned" companies throughout the country.

But there is only one MIEC. Our rate and dividend history is unparalleled. Guess that's why we don't need a large sales or marketing staff. Our track record speaks for itself.

The original is still the best. Call us.

Medical Insurance Exchange of California
6250 Claremont Avenue, Oakland, California 94618
Telephone 800-227-4527 www.miec.com
HAWAII CLAIMS OFFICE: 1360 South Beretania Street, Honolulu, Hawaii 96814

Our 25th Anniversary, 1975–2000

Sponsored by Hawaii Medical Association

WOLF
IN SHEEP'S CLOTHING



ww [illegible] com

Hawaii medical Journal
v. 59
no. 4
April 2000
Received on: 05-19-2000
Brown University Library
SCI

NISSAN

DRIVEN.

New City Nissan - Ala Moana 524-9111 • Tony Nissan - West Oahu 671-2611 (Waipahu) • Tony Nissan - Pearl City 487-1133
Infiniti - Nissan Motor Sales - Honolulu 836-0848 (Airport) • King Windward Nissan - Kaneohe 235-6433
Cutter Nissan of Maui - Kahului 877-9009 • Kauai Nissan - Lihue 245-6731 • Kamaaina Nissan - Hilo 935-3741 • Kona Auto Center - Kona 329-4408

1-SIZE
R15
H25x
SCI

HAWAII MEDICAL JOURNAL

May 2000 Volume 59, No. 5 ISSN: 0017-8594



Special Issue on the Third Pacific Vascular Symposium Part II

Serials Dept
Sciences Library
Box I, Brown University
Providence, RI 02912-0001



Make a Difference

As a physician, your work touches the lives of thousands of individuals. What if you could do something to improve the health and well-being of the entire state?

You can.

HMSA, Hawaii's premier nonprofit, member-based health plan, is looking for a qualified physician to serve in a new, high-level executive position—Vice President/Medical Director—created to enhance direct communication between Hawaii's physician community and HMSA.

In addition to medical policy development, the Vice President/Medical Director will also be involved in HMSA's quality assurance initiatives.

Hundreds of Hawaii's top physicians already share their time and expertise as members of HMSA's numerous advisory committees. With the addition of this new, high-level position, HMSA proudly takes its commitment to physician involvement a step further.

We have contracted Furst Group/MPI, an independent executive search firm, to assist in the selection process. If you are interested in applying for the position, or would like to suggest a possible candidate, please contact Bob Clarke via email at jclarke@furstgroup.com or call (815) 229-9111.

HMSA

Blue Cross Blue Shield of Hawaii

Choices for a Healthier Hawaii

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
Vincent S. Aoki MD, Benjamin W. Berg MD, John Breinich MLS, Satoru Izutsu PhD, James Lumeng MD, Douglas G. Massey MD, Myron E. Shirasu MD, Frank L. Tabrah MD, Alfred D. Morris MD

Journal Staff
Managing Editor: Becky Kendro
Editorial Assistant: Drake Chinen

Officers
President: James Lumeng MD
President-Elect: Philip Hellreich MD
Secretary: Gerald McKenna MD
Treasurer: Paul DeMare MD
Past President: Patricia L. Chinn MD

County Presidents
Hawaii: David Camacho MD
Honolulu: Walter K.W. Young MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Patrick Aiu MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 1999 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 180

Guest Editorial
Bo Eklof MD and Bob Kistner MD 180

Case of the Month
Matthew G. Weeks MD, CPT, MC, USA 182

Letter to the Editor 183

Medical School Hotline
Leslie Q. Tam PhD 184

Program for Tuesday, November 9, 1999, of the Third Pacific Vascular Symposium 187

Photos from the Third Pacific Vascular Symposium 188

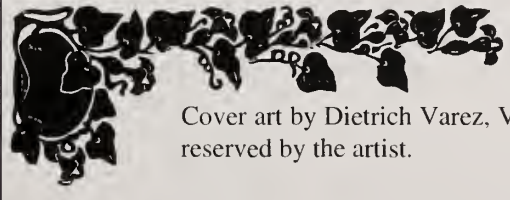
Faculty of the Third Pacific Vascular Symposium 189

Scientific Articles of the Third Pacific Vascular Symposium 191

News and Notes
Henry N. Yokoyama MD 228

Classified Notices 229

Weathervane
Russell T. Stodd MD 230



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

Royal Hawaiian Hotel

One of the landmarks of Waikiki, this "pink palace" opened on February 1, 1927.

Editorial

Norman Goldstein MD
Editor, Hawaii Medical Journal

Pacific Vascular Symposium on Venous Disease - Part II

In this issue, we continue the excellent Symposium on Vascular Disease sponsored by the Straub Foundation.

Our readers have commented favorably about the published discussions at the end of the formal papers. For many years, various specialty journals published post-paper discussions, but for some reason this has been discontinued. The Symposium co-Chairmen, Bo Eklof and Bob Kistner, had the foresight to have these recorded and transcribed.

Just in case you missed the manuscripts on Air Travel - Related Acute Thromboembolism, every Hawaii physician should read these papers - pages 153-168. These include Hawaii, London, Vienna, Sydney and Chicago "views." With our *middle of the Pacific location,* and our phenomenal air traffic to and through our airports, these papers are a "must read."

Established in 1983, the Straub Foundation is a unique community resource dedicated to improving the health of Hawaii's people through research and education. An independent 501(c)(3) public charity, the Foundation is directed by a volunteer Board representing medicine, business, education, and the general community. The Foundation works closely with community-wide physicians and health professionals to conduct medical research and organize educational programs.

A more fitting name for the Foundation would be The Straub Research and Education Foundation, since it has two main goals, research and education.

Research – The Foundation's research program highlights clinical research and pharmaceutical trials; the majority of projects involve patients in studies and investigations to provide better, more effective ways of managing health care needs, not necessarily "managed care."

Education – Attracting guest faculty who are specialists in their field as the vascular authorities, the Foundation's educational activities focus on delivering information on new research and improved practices and advances in the prevention and management of medical problems of interest to Hawaii. Each year, the Foundation assesses the community health care needs and organizes several programs to promote community awareness and healthier living.

As an independent public charity serving the community, Straub Foundation relies on individuals, corporations, trusts and foundations to support its programs. All gifts are tax-deductible; every dollar of every charitable contribution stays here in Hawaii to benefit the community.

The Hawaii Medical Journal is pleased to help the Straub Foundation in their efforts to promote medical education in Hawaii by publishing the Proceedings of this very important Symposium. The third and final part will appear next month.

Guest Editorial

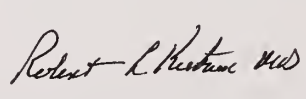
Robert L. Kistner MD
Bo Eklof MD, PhD
Co-Chairmen, The Third Pacific Vascular Symposium

The Third Pacific Vascular Symposium on Venous Disease took place at Mauna Lani Bay Hotel on the Big Island of Hawaii on November 2-6, 1999. The faculty included more than 40 of the leaders in phlebology, representing 5 continents. The general theme was to contrast aggressive treatment of acute and chronic venous disease with a more conservative approach.

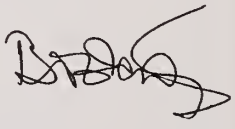
The first day featured a workshop on venous interventions with practical demonstrations of percutaneous interventions for acute and chronic venous disease. The second day focused on treatment and outcomes of DVT of the three segments of the leg followed by a session on air travel-related DVT. The third and fourth days were devoted to the controversy on management of venous ulcers. The last day of the symposium featured a workshop on treatment of varicose veins and spider veins with practical demonstrations of duplex guided sclerotherapy, lasers and new surgical developments.

We were excited when Norman Goldstein, the Editor for the Hawaii Medical Journal, warmly embraced the idea to publish the proceedings of this very lively meeting. In this issue the short papers and heated discussions from the third and fourth days are presented. Current understanding of the pathophysiology of the venous ulcer is discussed with different modalities to change its progressive course. The diagnostic process for patients with venous ulcer is described in detail starting in the office (level 1), continuing in the non-invasive vascular lab (level 2) and in some cases, proceeding to interventional radiology (level 3). Venous outcomes assessment in chronic venous disease is discussed. In the session on Quo Vadis, some of the faculty are considering the future directions of management of chronic venous disease.

Enjoy this exciting issue of the Hawaii Medical Journal.



Robert L. Kistner, MD
Co-Chairman



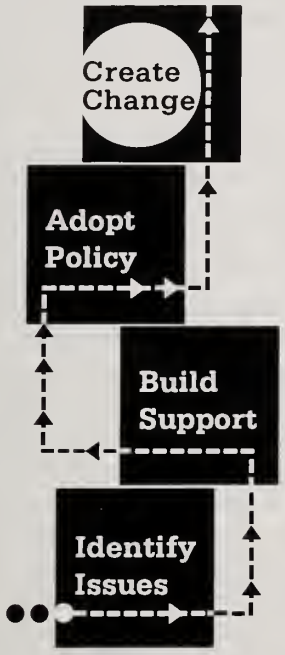
Bo Eklof, MD, PhD
Co-Chairman

STRAUB FOUNDATION
1100 Ward Avenue, Suite 1045
Honolulu, HI 96814
Ph: (808) 524-6755
www.straub-foundation.org
Better Health Through Research and Education

The American Medical Association Organized Medical Staff Section (AMA OMSS) invites your medical staff to be represented at its

2000 Annual Assembly Meeting

June 8-12, in Chicago



The OMSS is a powerful voice, advocate, and resource for empowering hospital and other health care entity medical staffs. The OMSS meets twice year to:

- **Identify issues** of critical importance to medical staffs, such as on-call emergency coverage and EMTALA guidelines, scope of practice, "exclusive credentialing," HCFA regulations, and medical errors;
- **Build support** for these issues through educational programs, special issue forums, state and regional caucuses, reference committee hearings, the OMSS Assembly, and the AMA House of Delegates; and
- Persuade the AMA to **adopt policy** that will further the needs and concerns of medical staffs; so as to
- **Create change** at various levels within the public and private sector in an effort to improve the quality and delivery of medical care and the professional and personal success of physicians

Elect a member of your medical staff to serve as an OMSS representative* and attend the **2000 Annual AMA OMSS Assembly Meeting**. Topics for educational programs include:

- communication basics, team building and problem-solving
- on-call emergency coverage and EMTALA compliance
- scope of practice
- medical staff bylaws and the changing environment
- building "win-win" relationships between medical staffs and hospital/IDS administration
- status of legislative initiatives
- medical errors
- the impact of MCO insolvency on physician practice

For more information on how to register, call 800 262-3211 and ask for the Department of Organized Medical Staff Services or e-mail us at **omss@ama-assn.org**

*Must be an AMA member

American Medical Association

Physicians dedicated to the health of America

Case of the Month

Ehrlichiosis...in Hawaii? An Unusual Presentation

Matthew G. Weeks, MD, CPT, MC, USA
Department of Family Practice
Tripler Army Medical Center
Honolulu, Hawaii

Tick-borne disease like Rocky Mountain Spotted Fever, tularemia, and relapsing fever, have long been recognized but have been joined in the past two decades by newly described diseases such as Lyme disease, babesiosis, and ehrlichiosis. The first case of human ehrlichiosis in the western hemisphere was recorded in 1986.[1] Human ehrlichiosis is a geographically diverse tick-borne disease that has two pathologically distinct but clinically similar forms. Human monocytic ehrlichiosis (HME) and human granulocytic ehrlichiosis (HGE) have been reported in 32 states on the U.S. mainland, Western Europe, Scandinavia, and Africa.[2] Indigenous and introduced species of ticks may be found in Hawaii, but none have been implicated as vectors for ehrlichiosis or other human pathogens. The incubation period for ehrlichiosis ranges from 0-34 days, but symptoms generally occur one week after tick exposure. If untreated, ehrlichiosis can lead to multi-organ failure and death. The following case illustrates that clinicians living in non endemic areas must obtain a remote history of a tick bite or travel into areas endemic for tick-borne illness.

Case Report

A previously healthy 29-year-old Hispanic male soldier presented to a military hospital in Hawaii with a two-week history of severe retro-orbital headaches, photophobia, intermittent fevers up to 103 degrees F, rigors, anorexia, nausea, and vomiting. The patient was treated for suspected sinusitis with Bactrim and reported no resolution of his symptoms. He was referred to an Otolaryngologist. Evaluation with nasopharyngolaryngoscopy and CT scans failed to reveal evidence of sinusitis.

This soldier was stationed at Schofield Barracks, Hawaii. His travel history included attendance at field exercises in Texas and Alaska, ten and six weeks prior to presentation, respectively. In Texas, he recalled a tick bite to his left groin.

His physical examination revealed a temperature of 101.8 degrees F, moderate distress secondary to headache, pain on extraocular movement, photophobia, and bilateral inguinal and axillary adenopathy. Pertinent negative findings included normal fundi, no rhinorrhea, no meningismus, and no focal neurological deficits.

Initial laboratory values were significant for elevated hepatic transaminases; AST-415 U/L, ALT-517 U/L, GGT-128 U/L, alkaline phosphatase 260 U/L, and total bilirubin level of 1.7 mg/dl. The patient was noted to have thrombocytopenia with a platelet level of 94 X10(9)/L. A normal WBC count of 8.1 X10(9)/L, hemoglobin of 15.3 g/dl, and hematocrit of 44.4%. A lumbar puncture was performed and spinal fluid analysis was normal with respect to glucose, protein, cell count, gram stain, and culture. Other pertinent negative lab tests included serum chemistry, Lyme, Babesia, Rocky Mountain Spotted Fever, Leptospirosis, EBV, CMV, HIV, Hepatitis A/B/C, and Toxoplasmosis serologies.

The patient was empirically started on Doxycycline 100 mg po bid for 14 days. His symptoms and laboratory abnormalities resolved rapidly over the next two days and he had a full recovery. An admission serum titer was positive for *Ehrlichia chafeensis* IgG at 1:256 and convalescent testing was not performed given the high acute titer and clinical criteria consistent with the diagnosis of Human Monocytic Ehrlichiosis.

Discussion

Ehrlichiae are obligate intracellular gram negative bacteria. *Ehrlichia chaffeensis* is the agent responsible for HME and a yet unnamed organism genetically similar to *Ehrlichia equi* and *Ehrlichia phagocytophilia* results in HGE.[3,4,5] The ticks responsible for transmission of HME are *Dermacentor variabilis* (Dog tick) and *Amblyomma americanum* (Lone Star tick). The organism responsible for HGE is also carried by *Dermacentor variabilis* as well as *Ixodes scapularis* (Deer tick).(2) Neither Hawaii nor Alaska have reported a case of HME or HGE, but both are endemic in Texas.

Human Ehrlichiosis is usually suspected on the basis of a history of a recent tick bite. The usual incubation period is one to thirty four days.(6) Common presenting symptoms include fever, rigors, malaise, myalgia, and headaches. Less frequently, one may see diaphoresis, cough, pharyngitis, lymphadenopathy, anorexia, nausea, vomiting, diarrhea, abdominal pain, arthralgias, mental confusion, or a non-specific rash. Other clinical features described include ARDS, toxic shock syndrome, myocardial involvement (e.g. left ventricular dilatation), brachial plexopathy, prolonged fever, hypotension, pharyngitis, and conjunctivitis.[2]

Laboratory findings most commonly seen include thrombocytopenia, lymphocytopenia, leukopenia, and elevated hepatic transaminase levels. Less frequent laboratory findings include anemia, elevated cerebrospinal fluid protein and pleocytosis, fibrin split products, hyponatremia, elevated ESR, elevated blood urea nitrogen and creatinine, elevated CPK and elevated bilirubin.[2] On a Wright stain of the peripheral smear there may be morulae (intracellular inclusions) seen in either monocytes or granulocytes.[1]

Complications of untreated Human Ehrlichiosis include severe cough with pulmonary infiltrates, gastrointestinal bleeding, gastroenteritis, meningitis, pericarditis, hepatitis with focal hepatic necrosis, renal failure, disseminated intravascular coagulopathy, opportunistic infections, and multi-organ failure.[6]

The emergence of ehrlichiosis has broadened the differential diagnosis of patients with "flu-like" symptoms. The clinical presentation mimics many infectious diseases, to include leptospirosis, mononucleosis, viral hepatitis, gastroenteritis, endocarditis, pneumonia, and meningoencephalitis. It also may resemble non infectious diseases, such as hematologic malignancies and collagen vascular diseases.

Ehrlichiosis should be considered in any febrile patient with exposure to ticks within the preceding three weeks, particularly if leukopenia, thrombocytopenia, or elevated hepatic transaminases are seen. However, as this case illustrates, prolonged incubation periods occur and clinicians must take this into acount.

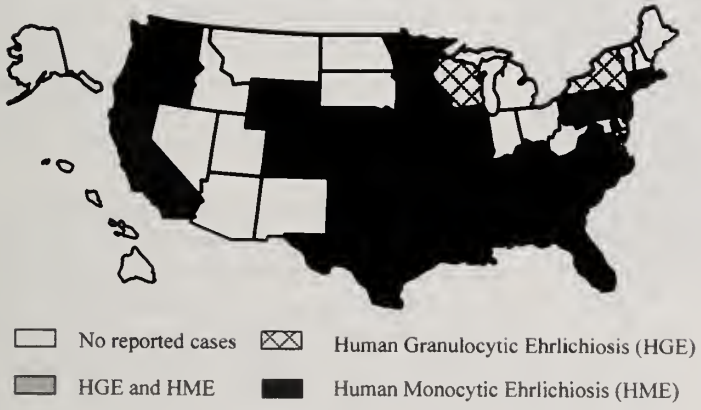
Currently the diagnosis of HME and HGE is made by a fourfold

rise or fall in immunofluorescent antibody (IFA) titer with a peak titer of 64 or greater in a clinically compatible case.[7] Observation of morulae in a blood smear or a buffy coat preparation is insensitive but should be pursued, as it can help establish the diagnosis immediately. Other diagnostic techniques include immunohistochemistry, and culture.[2] PCR primer sets have also been developed for the diagnosis of both HGE and HME.[8]

Doxycycline 100 mg po bid for 10-14 days is the treatment of choice.[6,7] For children, chloramphenicol is recommended but has been shown to be less effective.[2] Treatment should not be withheld pending laboratory confirmation, as delays in diagnosis may be associated with worse outcomes.

This case was unusual in that it either represents a prolonged incubation period if aquired in the endemic area of Texas, or a case of transmission of the disease occurring in Alaska or Hawaii – states where there have been no prior reported cases of ehrlichiosis. It is presumed that this most likely represents a prolonged incubation period based on the history of a tick bite in Texas. Although no endemic tick-borne disease is found in Hawaii, the increased recognition and prevalance of emerging tick-borne diseases worldwide will impact healthcare providers here. The differential diagnosis in the febrile traveler continues to expand and ehrlichiosis is yet another disease to be considered.

Geographic Distribution of Human Ehrlichiosis 1986-1996



References

1. Maeda K, Markowitz N, Hawley RC, et al. Human infection with *Ehrlichia canis*, a leukocytic rickettsia. N Eng J Med 316: 853-856, 1987.
2. Fritz CL, Glaser CA. Ehrlichiosis. Infectious Disease Clinics of North America. 1998, 12: 123-136.
3. Dawson JE, Anderson BE, Fishbein DB, et al. Isolation and characterization of an *Ehrlichia* sp. From a patient diagnosed with human ehrlichiosis. J Clin Microbiol. 29: 2741-2745, 1991.
4. Chen SM, Dumler JS, Bakken JS, et al. Identification of a granulocytotropic *Ehrlichia* species as the etiologic agent of human disease. J Clin Microbiol. 32: 589-595, 1994.
5. Madigan HE, Richter PJ, Kimsey RB, et al. Transmission and passage of horses of the agent of human granulocytic ehrlichiosis. J Infect Dis. 172: 1141-1144, 1995.
6. Eng TR, Harkess JR, Fishbein DB, et al. Epidemiologic, clinical and laboratory findings of human ehrlichiosis in the United States. 1988. JAMA 264: 2251-2258, 1990.
7. Centers for Disease Control and Prevention: Human ehrlichiosis - Maryland, 1994. MMWR 45: 798-802, 1996.
8. Everett ED, Evans KA, Henry RB, et al: Human ehrlichiosis in adults after tick exposure: Diagnosis using polymerase chain reaction. Ann Intern Med 120: 730-735, 1994.

Letter to the Editor



Thomas J. Whelan, Jr., MD
1921-1999

Sir:

Mrs. Norma Whelan, Dr. Thomas Whelan's wife, mailed my daughter, Sandra, and I copies of the Hawaii Medical Journal special memorial issue on Dr. Thomas J. Whelan, Jr. I have read each article written by his children and professional colleagues, but I saw nothing of his compassion for his patients and the patients family. His compassion is what I believe made him a great surgeon.

I met Dr. Whelan in August 1962 when he was chief of vascular surgery at Walter Reed Medical Center when my 7-year-old daughter, Sandra, had been referred to him with a large liver tumor. Dr. Whelan removed the tumor in a 12 hour complicated procedure that I later learned few surgeons in the United States were qualified to perform.

What really impressed my wife, Louise, and I was Dr. Whelan's compassion and concern for his patients and their family. He arranged accommodations for my wife and I at Walter Reed and spent hours with Sandra while she was in surgical intensive care. After Sandra's release from the hospital, she was followed for years by Dr. Whelan. While sitting in the doctor's office during follow up visits I've heard Dr. Whelan make telephone calls to arrange transportation to Washington, DC and accommodations near Walter Reed Medical Center while a family member was undergoing and recovering from a major surgical procedure. Mrs. Whelan told me that Doctor Whelan often made house calls. And over the ensuing years I remained in touch with Dr. Whelan and on my frequent visits to Hawaii a must for me was a call to a doctor.

My family and I are fortunate and honored to have met a man possessing so great a professional skill and so much concern for his patients and their families. I am fortunate to have met and know so wonderful a man. To my family he was special.

Sincerely,
John Ireland

Medical School Hotline

Encoding Specificity and Problem-Based Learning (PBL)

Leslie Q. Tam PhD
Professor, Department Tropical Medicine and Medical Microbiology
Director, Office of Medical Education

The John A. Burns School of Medicine (JABSOM) is completing its tenth year of Problem-Based Learning (PBL). In reflecting on the dramatic changes in the ways students learn, the educational principle of encoding specificity is significant. Howard Barrows (1985) noted that upon entering their third year clerkships, medical students in schools with traditional, lecture-based curricula do not remember or cannot apply what they were taught in the basic sciences. Schmidt (1983) suggested that this failure is due to the lack of encoding specificity. Schmidt has argued that the closer the resemblance between how something is learned and how it is used determines how well it is remembered and how well it is applied.

The lack of encoding specificity is apparent in traditional models for the teaching of microbiology. When JABSOM began in the late 1960's, students were given sequential lectures in bacteriology, virology, mycology and parasitology. The Department of Tropical Medicine and Medical Microbiology consisted of bacteriologists, virologists, and several parasitologists. The bacteriologists began their lectures series with the Gram (+) cocci, then moved to the Gram (-) cocci, and ended with lectures on the spirochetes. These presentations were followed by lectures by virologists and parasitologists. While useful to graduate students, who took the same course, this taxonomic and morphologic organization was not always useful for medical students who were preparing for their third year clerkships and expected to solve clinical problems and make clinical diagnoses.

In the PBL curriculum, medical students learn microbiology in a model whereby in the first unit (15 weeks), students study ten clinical cases. Three are microbiological: streptococcal pharyngitis, hepatitis B, and leprosy. While these microorganisms seem unrelated and the observer may conclude that students are learning microbiology in a piecemeal fashion, students focus on large, organizing concepts of infectious disease. With the case of pharyngitis, they learn the cardinal signs and symptoms of acute infection and inflammation. The hepatitis B case introduces the concept of viruses as pathogens, and students learn the clinical signs and symptoms of viral infection. In the third microbiology case, students study leprosy and learn to recognize slowly developing, subacute chronic infections from the rapidly developing, acute, febrile illness. The three cases introduce concepts of acute vs chronic infection, bacterial vs. viral infection, and humoral vs. cell-mediated immunity.

PBL Units 2-4 are organ-system based. The encoding of new information begins in these units. Unit 2 consists of a month each of cardiovascular, respiratory and renal problems. The respiratory subunit includes two infectious disease problems. The patient, Bob Kim, presents with fever, chest pain and shortness of breath for the past three days. Students now ask: Does Mr. Kim suffers from an acute or chronic infection? If acute, they ask and learn what organisms are in the differential diagnosis for acute, community-acquired pneumonia. The problem continues. Students learn that Mr. Kim has productive cough and consolidation in the right lower lobe. They begin to learn the differences between typical and atypical pneumonias. Students study the various bacteria that result in pneumonias with productive cough and consolidation: *S. pneumoniae, H. influenzae,* and *S. aureus*. They also learn about the atypical pneumonia caused by *Mycoplasma pneumoniae*, Chlamydia pneumoniae, and influenza. Mr. Kim turns out to be an alcoholic and a 40 pack-year smoker. Students learn about community-acquired pneumonias in immunocompromised individuals caused by *Klebsiella pneumoniae* and *Legionella pneumophila.* As students progress through the curricular units, they learn about urinary tract infections, GI infections, musculo-skeletal infections, CNS infections. Students in the PBL curriculum learn about microorganisms, as these would emerge in the clinical setting. They encode new information in ways that will be useful as clinicians.

In 1983, a commission of basic scientists, clinicians, Deans, and leaders in medical education met to discuss the effectiveness of traditional medical teaching methods. One participant argued, "a major problem is that integration of new information acquired in the pre-clinical years is expected to occur automatically in the clinical years" (Muller, 1984). Third year ward clerks taught microbiology in a traditional curriculum are expected to reorganize the various bacteria, viruses, fungi and parasites into clinically relevant groups. But there is little time in the third year to sort out those bacteria, viruses and fungi that cause typical, productive pneumonias from those that cause atypical pneumonia. Medical faculty supervising third year clerks expect that this knowledge has already occurred in the first two years.

On a personal note, the author began teaching bacteriology in 1986, using the traditional lecture format. This is the way he had been taught as a basic scientist; it is the way he knew the material best; and it is how he assumed medical students should learn it. When he began teaching third year medical students and quizzed them about what they had learned, he was astonished to see how little they remembered.

Ten years after switching to PBL at JABSOM, faculty in the Office of Medical Education better understand principles of education and how medical students learn. Faculty have reported, as Schmidt did in 1983, that new information is best retained if it is assimilated in ways that it will be used.

Now basic scientists are beginning to think like clinicians and to teach basic science to medical students clinically relevant ways. It is expected that will be better retained and applied in clinical problem solving.

References

1. Barrows, H.S. *How to Design a Problem-based Curriculum for the Preclinical Years.* New York: Springer Publishing Co. 1985.
2. Schmidt, H.G. 1983. Problem-based learning: rationale and description. *Med. Educ.27*:422-32.
3. Muller, S. (Chair). 1984. Physicians for the twenty-first century: report on the project panel on the general professional education of the physician and college preparation for medicine. *J. Med. Educ. 59:* Part 2 (November).

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

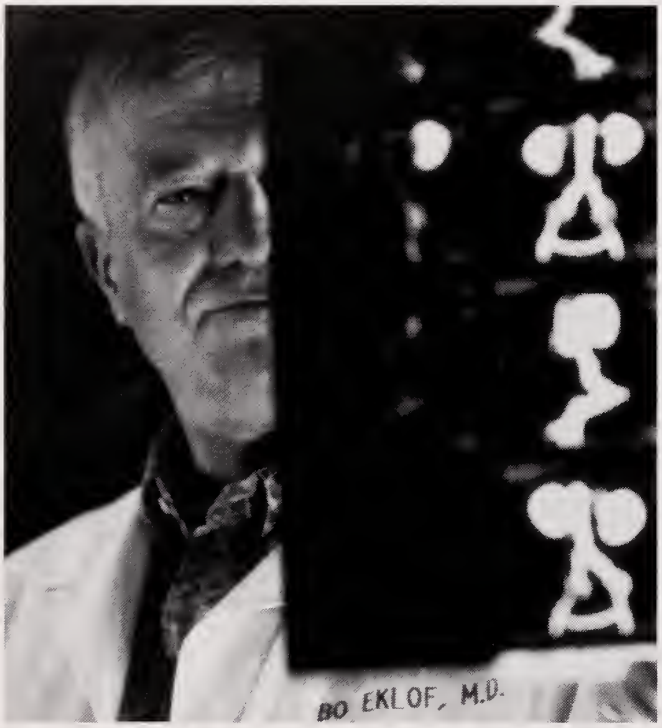
The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA

Join us in the quest for continued medical excellence.



Join your Straub colleagues as we strive for continuing medical excellence.

Straub Clinic & Hospital, Inc. is accredited by the Hawaii Medical Association to sponsor continuing medical education for physicians.

Straub designates this educational activity for a maximum of one credit hour in Category 1 of the Physician's Recognition Award of the American Medical Association. Each physician should claim only those hours of credit that he/she actually spent in the educational activity.

Straub

Partners in health

*straub*health.com

You are invited to attend...

– Friday Noon Conference –

JCAHO 2000: Issues That Impact Your Practice $$

Kevin Matsukado

May 5, 2000, 12:30 - 1:30 p.m.

Doctors Dining Room

Learning Objectives

At the conclusion, participants will be able to:

- Identify the roles of responsibility and strategies related to the JCAHO process.
- Gain knowledge of JCAHO requirements that impact your practice.
- Evaluate and measure the impact of JCAHO standards that have on your practice.

Friday Noon Conference – Luncheon

Pitfalls in the Diagnosis of Headache

Mark W. Green, MD

May 12, 2000, 12:30 – 1:30 p.m.

Doctors Dining Room

Learning Objectives

At the conclusion, participants will be able to:

- Gain knowledge to distinguish those headaches which are symptomatic or serious underlying medical conditions from the primary headache syndromes.
- Recognize the importance of making an accurate diagnosis and to initiate effective treatment.
- Understand the different treatment options available.

We would like to acknowledge the Educational Grant from Cerenex Pharmaceuticals/Glaxo Wellcome

Friday Noon Conference – Luncheon

Using Beta Blockers to Treat Heart Failure

Roger White, MD

May 19, 2000, 12:30 - 1:30 p.m.

Doctors Dining Room

Learning Objectives

At the conclusion, participants will be able to:

- Describe the pathophysiology of congestive heart failure.
- Summarize clinical studies on heart failure.
- Understand the rationale for using beta blockers early to reduce long term mortality of congestive heart failure.

We would like to acknowledge the Educational Grant from Smithkline Beecham

Friday Noon Conference

How to Monitor and Assist the Defense of a Malpractice Claim

Frank L. Tabrah, MD

June 16, 2000, 12:30 - 1:30 p.m.

Doctors Dining Room

Learning Objectives

At the conclusion, participants will be able to:

- Describe the steps involved in a malpractice case; how to prepare and what to expect when your name appears on the subpoena as the defendant.
- Gain knowledge on how the judicial system works and what they hope to find in a malpractice claim.
- Summarize your role as defendant involved in the case and the role you are expected to take in the case.

Please call Fran Smith at 522-4471 for more information.

Third Pacific Vascular Symposium On Venous Disease November 2-6, 1999

Mauna Lani Bay Hotel & Bungalows • Kohala Coast, Big Island of Hawaii, USA

THURSDAY, NOVEMBER 4, 1999 (MAUNA LANI BALLROOM)

7:00 a.m. CONTINENTAL BREAKFAST/EXHIBITS OPEN

VENOUS ULCER
PART ONE - THE CONTROVERSIES IN TREATMENT

7:30 a.m. Moderator: Ralph G. DePalma, MD, FACS
Panel: Kevin G. Burnand, MBBS, FRCS, MS
Bo Eklof, MD, PhD
Ermenegildo A. Enrici, MD

"How my method of treatment changes the pathophysiology to heal the ulcer and prevent recurrence?"

1. Philip D. Coleridge Smith, DM, MA, FRCS - Drugs Are the Ultimate Answer
2. Gregory L. Moneta, MD - Wrapping
3. Peter Gloviczki, MD - Sepsing
4. John J. Bergan, MD, FACS, Hon,FRCS(Eng) - Stripping
5. Michel Perrin, MD - Repairing Primary Reflux
6. Seshadri Raju, MD - Repairing Secondary Incompetence

VENOUS ULCER
PART TWO - ANY CONTROVERSIES IN DIAGNOSIS?

Moderator: Seshadri Raju, MD
Panel: Philip D. Coleridge Smith, DM, MA, FRCS
Kenneth A. Myers, MS, FACS, FRCS
Frank Padberg, Jr., MD, FACS
D. Eugene Strandness, Jr., MD, DMed(Hon)
David S. Sumner, MD

9:00 a.m. LEVEL 1 - THE OFFICE
1. Kenneth A. Myers, MS, FACS, FRACS - Clinical Evaluation
2. David S. Sumner, MD - The Hand-Held Doppler
3. Andre Cornu-Thenard, MD - The French C in CEAP
4. Frank Padberg, Jr., MD, FACS - Sensory Impairment

10:30 a.m. BREAK/EXHIBITS OPEN

11:00 a.m. LEVEL 2 - THE VASCULAR LAB
1. Jan Holm, MD - Reliability of Clinical Diagnosis
2. D. Eugene Strandness, Jr., MD, DMed(Hon) - Duplex in Reflux
3. Paul R. Cordts, LTC, MC - Plethysmography in Reflux
4. Peter N. Neglen, MD, PhD - Evaluation of Obstruction

12:30 p.m. LEVEL 3 - INVASIVE PROCEDURES
1. Seshadri Raju, MD - Descending Venogram
2. Kevin G. Burnand, MBBS, FRCS, MS - The St. Thomas Way

1:30 p.m.	REVAS (Recurrent Varices After Surgery) Michel Perrin, MD
2:00 p.m.	OUTCOMES EVALUATION Robert B. Rutherford, MD, FACS, FRCS
2:30 p.m.	BREAK/EXHIBITS OPEN

VENOUS ULCER
QUO VADIS?

3:00 p.m.	RESULT OF QUESTIONNAIRE REGARDING DEEP VENOUS RECONSTRUCTION Tomohiro Ogawa, MD, PhD
	VALVULOPLASTY AND PRIMARY VENOUS INSUFFICIENCY Fedor Lurie, MD, PhD
	Moderator: Robert L. Kistner, MD Panel: Michael C. Dalsing, MD Ralph G. DePalma, MD, FACS Peter Gloviczki, MD Kenneth A. Myers, MS, FACS, FRCS Thomas F. O'Donnell, Jr., MD Michel Perrin, MD Seshadri Raju, MD Robert B. Rutherford, MD, FACS, FRCS D. Eugene Strandness, Jr., MD, DMed(Hon)
5:00 p.m.	SCIENTIFIC SESSION ENDS

Photos



Faculty and participants visit the exhibits while on break from the scientific session.



Panelists discuss venous interventions:
(l to r): Kevin Burnand, MBBS from St. Thomas Hospital, London, England; Peter Neglen, MD, PhD from River Oaks Hospital, Jackson, Mississippi; Robert Rutherford, MD from University of Colorado, Silverthorne, Colorado; Michel Perrin, MD from University of Grenoble, Grenoble, France; and Robert L. Kistner, Co-Chairman, from Straub Clinic and Hospital, Honolulu, Hawaii.

Faculty

Peter W. Balkin, MD
Chief of Radiology, Straub Clinic & Hospital, Honolulu, Hawaii, USA

Gianni Belcaro, MD, PhD
Researcher, Cardiovascular Institute, Chieti University, Pescara, Italy
Director Angiology & Vascular Surgery, Pierangeli Clinic, Pescara, Italy

John J. Bergan, MD, FACS, Hon, FRCS(Eng)
Professor of Surgery, University of California Medical School, San Diego, California, USA

Kevin G. Burnand, MBBS, FRCS, MS
Professor of Vascular Surgery, Department of Surgery, St. Thomas' Hospital, London, United Kingdom

Joseph A. Caprini, MD, MS, FACS, RVT
Louis W. Biegler Chair of Surgery, Northwestern University Medical School, Chicago, Illinois, USA
Professor of Bioengineering, Northwestern University, Evanston, Illinois, USA
Director of Surgical Research, Evanston Northwestern Healthcare, Evanston, Illinois, USA

Philip D. Coleridge Smith, DM, MA, FRCS
Senior Lecturer, Department of Surgery, UCL Medical School, London, United Kingdom

Anthony J. Comerota, MD, FACS
Professor of Surgery, Temple University School of Medicine, Philadelphia, Pennsylvania, USA
Chief of Vascular Surgery; Director, Center for Vascular Diseases, Temple University Hospital, Philadelphia, Pennsylvania, USA

Paul R. Cordts, LTC, MC
Clinical Assistant Professor of Surgery, USUHS, USA
Clinical Assistant Professor of Surgery, University of Hawaii, John A. Burns School of Medicine, Honolulu, Hawaii, USA
Vascular Surgeon, Tripler Army Medical Center, Honolulu, Hawaii, USA

Andre Cornu-Thenard, MD
Director of Phlebology Education, Saint Antoine Hospital, Paris, France

Andrew H. Cragg, MD
Clinical Partner, Minneapolis Vascular Institute, Minneapolis, Minnesota, USA
Clinical Professor of Radiology, University of Minnesota, Minneapolis, Minnesota, USA
Interventional Radiologist, Fairview-University Medical Center, Minneapolis, Minnesota, USA

Michael C. Dalsing, MD
Director of Vascular Surgery, Indiana University Medical School, Indianapolis, Indiana, USA

Ralph G. DePalma, MD, FACS
Professor of Surgery, Vice Chair Surgery, Associate Dean, University of Nevada School of Medicine, Reno, Nevada, USA
Chief of Surgery, Reno VAMC, Reno, Nevada, USA

Bo Eklof, MD, PhD
Vascular Surgeon, Straub Clinic & Hospital, Honolulu, Hawaii, USA
Clinical Professor of Surgery, University of Hawaii, John A. Burns School of Medicine, Honolulu, Hawaii, USA
Medical Director, Straub Foundation, Honolulu, Hawaii, USA

Ermenegildo A. Enrici, MD
Chairman, Phleb/Lymph Department, Argentine Catholic University, Buenos Aires, Argentina
Honorary Consultant, Central Military Hospital, Buenos Aires, Argentina
Associate Academic Member, Argentine Academy of Surgeons, Buenos Aires, Argentina

Peter Gloviczki, MD
Vice-Chair, Division of Vascular Surgery, Mayo Clinic, Rochester, Minnesota, USA
Professor of Surgery, Mayo Medical School, Rochester, Minnesota, USA

Gabriel Goren, MD
Director, Vein Disorders Center, Encino, CA, USA

J. Jerome Guex, MD
Vice-President, French Society of Phlebology, Nice, France
Treasurer, International Union of Phlebology, Nice, France

Jan Holm, MD
Associate Professor of Surgery, Department of Surgery, Sahlgrenska University Hospital, Goteborg, Sweden

Shunichi Hoshino, MD, PhD
Professor and Chairman, Department of Cardiovascular Surgery, Fukushima Medical University School of Medicine, Fukushima, Japan

Russell D. Hull, MBBS, MSc
Director, Thrombosis Research Unit, Professor of Medicine, University of Calgary, Calgary, Alberta, Canada

Curtis B. Kamida, MD
Radiologist, Straub Clinic & Hospital, Honolulu, Hawaii, USA
Clinical Associate Professor of Radiology, University of Hawaii, John A. Burns School of Medicine, Honolulu, Hawaii, USA

Robert L. Kistner, MD
Vascular Surgeon, Straub Clinic & Hospital, Honolulu, Hawaii,

USA
Clinical Professor of Surgery, University of Hawaii, John A. Burns School of Medicine, Honolulu, Hawaii, USA
President, Straub Foundation, Honolulu, Hawaii, USA

Nicos Labropoulos, PhD, DIC, RVT
Assistant Professor of Surgery, Loyola University Medical Center, Maywood, Illinois, USA
Director of Research, Vascular Diagnostics Ltd., Park Ridge, Illinois, USA
Vascular Consultant, West Suburban Hospital, Oak Park, Illinois, USA

Reginald S.A. Lord, MD
Professor, Department of Surgery, University of Sydney, Sydney, Australia

Fedor Lurie, MD, PhD
Department of Anesthesiology, University of California Davis Medical Center, Sacramento, California, USA

G. Mark Malouf, MBBS, FRACS, FRCS
Surgeon in Venous Disease, Westmead Hospital, Sydney, Australia
President, Australian and New Zealand Society of Phlebology, Australia

Elna M. Masuda, MD
Vascular Surgeon, Straub Clinic & Hospital, Honolulu, Hawaii, USA
Clinical Assistant Professor of Surgery, University of Hawaii, John A. Burns School of Medicine, Honolulu, Hawaii, USA

Mark Mewissen, MD
Associate Professor, Department of Radiology, Medical College of Wisconsin, Milwaukee, Wisconsin, USA

Gregory L. Moneta, MD
Professor of Surgery, Oregon Health Sciences University, Portland, Oregon, USA

Kenneth A. Myers, MS, FACS, FRACS
Professor, Monash Medical Centre and Epworth Hospital, Melbourne, Australia

Peter Neglen, MD, PhD
Vascular Surgeon, River Oaks Hospital, Jackson, Mississippi, USA

Thomas F. O'Donnell, Jr., MD
President & CEO, New England Medical Center, Boston, Massachusetts, USA
Andrews Professor of Surgery, Tufts University, Boston, Massachusetts, USA

Tomohiro Ogawa, MD, PhD
Cardiovascular Surgeon, Fukushima Medical University School of Medicine, Fukushima, Japan
Visiting Colleague, Department of Surgery, University of Hawaii, John A. Burns School of Medicine, Honolulu, Hawaii, USA
Research Fellow, Straub Foundation, Honolulu, Hawaii, USA

Frank Padberg, Jr., MD, FACS
Professor of Surgery, UMDNJ – New Jersey Medical School, Newark, New Jersey, USA

Hugo Partsch, MD
Professor of Dermatology, University of Vienna, Austria
Head of Dermatological Department, Wilhelminen-Hospital, Vienna, Austria
President, Union Internationale de Phlebologic, Vienna, Austria

Michel Perrin, MD
Associate Professor, University of Grenoble, Grenoble, France

John R. Pfeifer, MD, FACS
Professor of Surgery, University of Michigan School of Medicine, Ann Arbor, Michigan, USA
Director, Division of Venous Disease, University of Michigan School of Medicine, Ann Arbor, Michigan, USA

Seshadri Raju, MD
Emeritus Professor and Honorary Surgeon, University of Mississippi Medical Center, Jackson, Mississippi, USA

Robert B. Rutherford, MD, FACS, FRCS
Professor Emeritus, Department of Surgery, University of Colorado, Silverthorne, Colorado, USA

D. Eugene Strandness, Jr., MD, DMed (Hon)
Professor, University of Washington, Seattle, Washington, USA

David S. Sumner, MD
Distinguished Professor of Surgery, Emeritus; Southern Illinois University School of Medicine, Springfield, Illinois, USA
President, American Venous Forum, USA

Patricia E. Thorpe, MD
Associate Professor of Radiology/Surgery, Creighton University Medical Center, Omaha, Nebraska, USA

J. Leonel Villavicencio, MD, FACS
Professor of Surgery, Department of Surgery, Uniformed Services University of the Health Sciences, Bethesda, Maryland, USA
Senior Consultant, Department of Surgery and Director of Venous and Lymphatic Teaching Clinics, Walter Reed Army Medical Center, Washington, DC, USA and Naval Medical Center, Bethesda, Maryland, USA

Thomas W. Wakefield, MD
Professor of Surgery, Section of Vascular Surgery, University of Michigan Medical Center, Ann Arbor, Michigan, USA

Robert A. Weiss, MD
Assistant Professor, Department of Dermatology, Johns Hopkins University School of Medicine, Baltimore, Maryland, USA

MY METHOD OF TREATMENT CHANGES THE PATHOPHYSIOLOGY TO HEAL THE ULCER AND PREVENT RECURRENCE: DRUGS ARE THE ULTIMATE ANSWER!

Philip Coleridge Smith, DM, MA, FRCS
UCL Medical School
London, United Kingdom

Surgical treatments are widely used in the management of patients with venous leg ulcers. Surgery is most effective in patients with pure superficial venous incompetence, a group which comprises up to 50% of all patients with venous leg ulcers. Surgical procedures are available for the repair of deep vein incompetence, but the use of these is restricted to younger, fitter patients since they require major surgical interventions. Compression stockings and bandages are highly effective at healing venous ulcers but require skilled use by medical and nursing practitioners as well as good compliance by the patient. Most leg ulcer healing studies show high levels of recurrence following healing achieved by compression. Currently a small number of drugs has been evaluated to assess efficacy in achieving leg ulcer healing. None is as effective as of high levels of compression and only one study has assessed the efficacy of a drug at preventing ulcer recurrence. No available drug will therefore replace the use of compression at present.

Examination of indices of venous function in many patients shows that patients with the more severe stages of venous disease have worse venous function. However, there is huge overlap between the venous function of patients with mild symptoms and those with severe ulceration. This implies considerable variation between patients in their susceptibility to skin damage and leg ulceration. The basis of this variability is far from understood and has its origin in the molecular mechanisms which underlie the development of leg ulcers. Much of my research has shown that a series of systemic inflammatory mechanisms are enabled in patients with venous disease, including those with skin damage. It has not been possible to identify markers which specifically identify patients at high risk of skin damage and ulceration, although some endothelial adhesion molecules are particularly raised in patients with skin changes. Assuming that the crucial factors which make some patients susceptible to the development of leg ulceration can be identified, it may be possible to influence these by receptor blockers or other pharmacological means.

The mechanisms by which compression achieves ulcer healing are not completely understood. There are some effects on the large veins in the leg, but these do not include restoration of valvular competence, however, venous reflux is reduced by high levels of compression. There is probably also an effect on the microcirculation. This appears to comprise acceleration in flow velocity in capillaries in response to low levels of compression. At very high levels of compression (>100 mmHg) capillary flow ceases. The acceleration in flow velocity at therapeutic levels of compression may cause a change in the way in which blood constituents interact with the capillary wall, modifying the inflammatory response. Understanding the biochemical basis of the effect of compression may allow us to identify mechanisms which could be influenced by pharmacological means.

It is highly likely that the factors resulting in susceptibility to leg ulceration will form a crucial part of many important disease processes. The incentive for the pharmaceutical industry to develop drugs which influence this area will be considerable. Using such drugs it may be possible to achieve venous ulcer healing without any modification to the amount of venous reflux in a limb.

DISCUSSION

DR. BERGAN: I enjoyed the presentation exceedingly, and I think the theme that comes out is that venous hypertension, as Philip said, is a triggering mechanism for leukocyte activation and leukocyte endothelial interactions. There's no question that the intervention with this particular bioflavonoid, which is 90% Diosimin, affects leukocyte activation, and I think that Philip's thesis of intervening at the stage of edema is probably a very good one. As you have shown, Dr. DePalma, the same patient can have equal hemodynamic venous insufficiency in both lower extremities, only one of which develops chronic venous insufficiency with all of the skin changes. Therefore, there is an additional factor with which venous hypertension is interacting. Pharmacologic intervention will stop that additional factor which is local leukocyte activation.

DR. EKLOF: That was a beautiful start to this session. Philip, you are using the C of the CEAP classification. We'll listen to the French C later on today. Have you gone further into the classification of these ulcers that you were talking about? How many were post-thrombotic or secondary? How many were depending on primary venous disease?

DR. COLERIDGE SMITH: Yes, we did actually fully evaluate all aspects of the CEAP classification in our work, but for reasons you understand I presented the data in this way. In essence, a substantial proportion of our patients with venous ulceration and deep venous incompetence which accounted for more than half of our patients with the C4, 5, and 6 disease did have post-thrombotic deep vein changes.

DR. O'DONNELL: Philip that was a wonderfully illustrated talk, particularly a good advertisement for power pointers we were talking about in the LAX airport. I'm surprised that Professor Burnand is so quiet over there because, first of all, I quibble with your end points. You're using ulcer healing, and most people feel I don't care what you'll use, you'll get a relatively good rate of ulcer healing. I think really what we should be focusing on is ulcer recurrence and how we can prevent that. My second comment has to do with the flavonoid study. It reminds me of a comment by Hiram Polk when looking at prophylaxis treatment of wound infections. The incidence of healing in your control group was so low that any measurable improvement in the flavonoid group makes it look good. Would you comment?

DR. COLERIDGE SMITH: In the flavonoid study to which I referred, which is not my work but that of others and published in international scientific literature, the healing rate in the placebo group is low. The study was done by General Practitioners who used low compression. However, it was a randomized controlled study and it addressed ulcer healing. Your point about recurrence is, of course, very important, but ulcer healing is also very important. One needs to follow patients for around six months in order to establish the real complete ulcer healing rate, whereas if you're following patients to assess their recurrence, then you have to follow

them for years and probably need five times as many patients. So not surprisingly very few of those studies have actually been done.

DR. MYERS: Philip, that's all very interesting, but I guess you would be the first to agree that the results of drug treatment have been pretty lousy to date. If you had to guess, in what direction do you think the future research should go to find the magic drug that's actually going to influence ulcer healing?

DR. COLERIDGE SMITH: I think that's actually quite difficult. It depends on basic scientific research to establish the differences to which I was alluding. The differences that make patients susceptible to venous ulceration with the same abnormality of venous function, must depend upon endothelium and leukocytes, the way they interact, the reparative mechanisms, the vascular proliferation mechanisms.

DR. DEPALMA: How about doxycycline and tetracycline, metalloprotease inhibitors?

DR. COLERIDGE SMITH: Yes, it's possible.

DR. DEPALMA: They work pretty well, don't they? I mean, the cytokine release that you've shown, these are drugs that work in that area.

DR. COLERIDGE SMITH: Yes. I mean, they address venous or ulcer healing mechanisms, but I'm not sure that they actually influence the rate of venous ulcer healing or ulcer recurrence.

DR. KRYLOV: A very short remark. The device to measure the tonicity of the skin should be nominated, because terminology is important, the elastometer. You measure elasticity of the skin, not the tonicity, and as such, this device called elastometer is very useful in another surgical specialty, in plastic surgery.

MECHANISM OF ACTION OF COMPRESSION THERAPY FOR VENOUS ULCERATION

Gregory L. Moneta, MD
Oregon Health Sciences University
Portland, Oregon, USA

Until recently, the primary focus of research in chronic venous insufficiency has been the abnormal hemodynamics in the axial superficial and deep veins as well as the perforating veins. It is important to remember, however, that the target organ in chronic venous insufficiency is the skin and subcutaneous tissues. Abnormal venous hemodynamics somehow result in a myriad of changes in the skin and subcutaneous tissue that if unchecked eventually result in the formation of a venous ulcer. It is clear that over time, abnormal venous hemodynamics in the superficial, deep and perforating veins result in severe morphologic and functional changes in the cutaneous microcirculation. These changes included both destruction of dermal lymphatics as well as alterations in the morphology and probable function of the cutaneous capillary vessels.

The exact mechanism of action by which compressive therapy produces it's obvious benefit in the treatment of chronic venous insufficiency is unknown. Compressive therapy may produce changes in axial venous hemodynamics and/or changes in cutaneous and subcutaneous physiology that result in improvement in chronic venous insufficiency.

The effect of compressive therapy on deep venous hemodynamics has been the topic of multiple studies. We and other investigators, using both invasive and noninvasive techniques, have been unable to demonstrate significant changes in ambulatory venous pressure or venous recovery times with the use of compressive therapy.[1] Other researchers have described modest trends toward normal in measurements of venous hemodynamics with the use of compression stockings.[2]

Improvements in skin and subcutaneous tissue microcirculatory hemodynamics may contribute to the benefit of compression therapy. Laser Doppler studies demonstrate a dependency induced resting cutaneous hyperemia in patients with chronic venous insufficiency, but not in normals. Using this technique, impairment of the so-called venoarteriolar reflex may improve with the application of 40mm compressive stocking.[3] On the other hand, Xenon washout techniques used to measure dependent skin blood flow are unable to detect changes in chronic venous insufficiency patients compared to controls at rest or with exercise.

Another possible mechanism for the benefits of compression therapy is a direct effect on subcutaneous pressure. By increasing subcutaneous pressures compressive therapy may promote changes in Starling forces that promote reabsorption of the edema. Supine perimalleolar subcutaneous pressures rise with the application of elastic compression in limbs with chronic venous insufficiency.[5] This rise in subcutaneous tissue pressure may act to counter transcapillary Starling forces favoring leaking of fluid out of the capillary. These observations parallel the fact that edema reduction is the rule in patients with chronic venous insufficiency who wear effective compressive therapy. Video microscopic techniques can also demonstrate increased skin capillary density with edema resolution. Cutaneous metabolism may improve following edema reabsorption due to enhanced diffusion of oxygen and other nutrients to the cellular elements of the skin and subcutaneous tissues.

References

1. Mayberry JC, Moneta GL, DeFrang RD, Porter JM. The influence of elastic compression stockings on deep venous hemodynamics, *J Vasc Surg.* 1991;13:91-100.
2. Christopoulos DC, Nicolaides AN, Szendro G. Air plethysmography and the effect of elastic compression on venous hemodynamics of the leg, *J Vasc Surg.* 1987;5:148-159.
3. Christopoulos DC, Nicolaides AN, Belcaro GN, Kalodiki E. Venous hypertensive microangiopathy in relation to clinical severity in effect of elastic compression, *J Dermatologic Surgery Oncology.* 1991; 17:809-813.
4. Peters K, Sindrup JH, Petersen LJ. Lower leg subcutaneous blood flow during walking and passive dependency in chronic venous insufficiency, *Br J of Dermatology.* 1991;124:177-180.
5. Nehler MR, Moneta GL, Woodard DM. Permalleolar subcutaneous pressure effects of elastic compression stockings, *J Vasc Surg.* 1993;18(5):183-788.

DISCUSSION

DR. PARTSCH: Congratulations to this amount of data which you presented on compression. You have pointed out that you didn't find any change of deep venous hemodynamics with your kind of compression. This is true for elastic stockings with a pressure of 30 millimeters of mercury as you have measured it. If you take stiff material, apply stiff bandages like Unna boots with a pressure of 50 millimeters of mercury to the distal lower leg, you would get very high peaks of working pressure, and you could show a clear influence on deep veins. You can even prove this by doing phlebography, that the deep veins are narrowed, and in this situation of stiff inelastic bandages, you could be able to show an improvement of venous hypertension. So at least we were able to show this in the study which I can send to you if you're interested.

DR. MONETA: I think Dr. Partsch may be correct. The more pressure you can exert on the leg, the greater the chance you have of influencing what's going on inside the leg. It's always seemed to me a little strange that an elastic stocking on the surface of the leg could influence veins deep in the leg. After all, often you can hardly compress them, pushing hard with a duplex scanner.

UNIDENTIFIED SPEAKER: I enjoyed your talk very much and especially the part of the Starling mechanisms you pointed out. Do you have any clinical method to assess the lymphatic part of the equation? Is there any applicable method nowadays to assess the role of lymphatic flow disturbances in these patients?

DR. MONETA: We don't have one and I don't know of one. It would be interesting to know if there was. I can postulate that you could probably put a tracer in the skin and then subject the skin to compression and see how that tracer moves in normals versus noncompressed patients. The ability to do that exists. I haven't tried it though.

DR. ABU-BAKER: Why is the varicose ulcer only found in human being and not found in the animals?

DR. MONETA: I don't think that's the only example of human defects. I don't know why. I suppose we weren't designed to move on two feet originally.

DR. ABU-BAKER: Can the varicose ulcer have a genetic origin?

DR. BERGAN: The key feature is venous hypertension. So yes, primary varicose ulcers and postphlebitic skin changes are alike. The genetic factor is a predisposition to valve failure and wall failure.

DR. DEPALMA: Dr. Enrici, do you think there's a genetic origin? Si or no?

DR. ENRICI: No.

DR. BURNAND: Yes, of course it has a genetic origin because patients who are Factor 5 Leiden deficient develop post-thrombotic ulcers, and that's a genetic predisposition.

DR. MONETA: I don't know of any data that venous ulceration is linked to any specific part on the genome. However, looking at various populations, it appears there are some groups more greatly affected than others. For example, it appears venous ulceration is more prevalent in Northern European than in Southern European people.

DR. LORD: The logic was unescapable. The previous studies have shown that you only need compression up to the knee. Now, passing on from that, does one need compression only in the area of the ulceration and immediately around it or should we maintain the compression all the way up to the knee? In other words, you're showing that the compression has a local effect rather than effect on venous hemodynamics. So do we then logically progress and have smaller devices for local pressure rather than the general pressure all the way to the knee?

DR. MONETA: That sounds good to me. Many of us use various bolsters and other devices to try and add additional pressure at the site of the ulcer.

DR. BERNHARD: Excellent study, Greg. I just was wondering if you had or would correlate this with oxygen tension and does oxygen tension improve with various degrees of compression?

DR. MONETA: We haven't done that, and as far as I know, the studies that have tried to look at oxygen tension in venous ulceration have been conflicting. Some people have found diminished oxygen levels in the skin and others have not.

CONTROVERSIES IN THE TREATMENT OF VENOUS ULCERS: SEPSING?

Peter Gloviczki, MD
Mayo Clinic
Rochester, Minnesota, USA
A. Noel, MD, M. Kalra, MD

Subfascial endoscopic perforator vein surgery (SEPS), a minimally invasive operation for interruption of incompetent perforating veins has become increasingly popular and surgeons around the world have gained experience with the technique. SEPS is usually performed with ablation of the superficial reflux to treat patients with active or healed venous ulcers (Classes 6 and 5), although an increasing number of patients without ulcer history (Class 4) have also been treated with this technique. Although evidence on the effectiveness of SEPS has been accumulating, controversies on the usefulness of this operation still exist.

Is SEPS better than medical treatment?

Medical treatment of venous ulceration is time-intensive, requires strict patient compliance and has been associated with a high rate of ulcer recurrence. While claims about the superiority of medical treatment of venous ulcers have been made, the true endpoint, ulcer recurrence averaged 52% at 2 years in 8 studies, that included 488 limbs with Class 5 and Class 6 chronic venous disease (Table 1). Patients managed in an organized ulcer clinic, or inpatient unit do better than patients on minimally supervised home care. Clinical trials of strictly supervised medical management report success in healing of most ulcers over time (92-100%).[1,2] However, the prolonged disability, prohibitive cost and high rates of ulcer recurrence (33-100%) despite highly skilled care remain a concern. Even in compliant patients, ulcer recurrence averaged 28%. In one small series of 11 patients, at 2 years after treatment, ulcers recurred in all (Table 1).[3] In studies on conservative treatment more than 50% of the patients were noncompliant with compression. Ulcer recurrence rates following medical treatment range from 29 to 41% in compliant patients and from 71 to 100% in noncompliant patients.

These results compare unfavorably with those of SEPS with or without superficial reflux ablation. Individual series with SEPS have reported healing rates of 84-100% (average 90%) and recurrence rates of 0-22% at 2 years, with an average of 10% (Table 2).[4-8] Mid-term (24 months) results in 146 patients followed up in the NASEPS registry demonstrated that cumulative ulcer healing at one year was 88%, with a median time to healing of 54 days.[8] Cumulative ulcer recurrence at one year was 16% and at two years it was 28% (SE<10%). Post-thrombotic limbs had a higher two-year cumulative recurrence rate (46%) than those with primary valvular incompetence (20%) ($p<0.05$). Twenty-eight (23%) of the 122 patients who had active or healed ulcers (Class 5 or 6) before surgery, had active ulcer at last follow-up. Although no prospective, randomized comparison of these two modes of treatment exists, these data suggest, that SEPS, with ablation of superficial reflux, if indicated, is superior to medical management alone.

Is SEPS better than open perforator interruption?

Open ligation of incompetent perforating veins was described *larly*

nearly 70 years ago by Linton.[9] Ulcer recurrence rates following open perforator ligation range from 7-55%, averaging 22%. Although these are not significantly different from those following SEPS, wound complications following open perforator ligation have been frequent, ranging from 12% to 53%, and averaging 24%, resulting in prolonged hospitalization in most patients.

SEPS has the advantage of interrupting incompetent perforating veins in a bloodless field via small endoscopic ports placed remotely from the site of the ulceration. Lower morbidity and shorter hospital stay were reported with SEPS in a non-controlled trial that compared 37 SEPS procedures to 30 antedated open perforator ligations.[10] In addition, the short-term effects on ulcer healing were comparable in the two groups. A single prospective randomized study has investigated the rate of wound complications following open perforator ligation and SEPS.[11] Thirty-nine patients were randomized, and wound complications occurred in 53% in the open group versus in 0% in the SEPS group. During a mean follow-up of 21 months no ulcer recurrence was noted in either group of patients. The relative safety of SEPS was also confirmed in the North American (NASEPS) registry, where a 6% wound complication rate was reported, with one deep venous thrombosis at two months after surgery. The incidence of tibial nerve damage and deep vein thrombosis have been reported to be comparable to open surgery. Based on these data SEPS is at least equally effective and has the advantage of decreased morbidity and shorter hospital stay, when compared to open perforator ligation.

Is SEPS indicated in addition to superficial reflux ablation?

Superficial incompetence alone is found in about 10% of patients with venous ulcers. This subset of patients does well following saphenous vein ligation and stripping. The controversy arises in patients with concomitant perforator and/or deep vein incompetence. Experience with SEPS supports interruption of incompetent perforating veins and provides new data on the contribution of superficial and perforator vein incompetence in ambulatory venous hypertension indicating improved ulcer healing after elimination of both, superficial and perforator reflux.[4,5] Patients with combined deep, perforator and superficial incompetence exhibited accelerated healing and improved venous hemodynamics after ablation of the incompetent superficial and perforator systems without intervention to the deep veins.[12]

However, clinical benefit attributed directly to interruption of incompetent perforating veins has been difficult to assess, since concomitant ablation of saphenous reflux is frequently performed. Also, ablation of superficial reflux alone has been reported to result in hemodynamic and clinical improvement in the presence of combined deep and superficial insufficiency.[13,14] In addition, perforating veins are frequently interrupted during ablation of superficial reflux, even though this may be unintentional. Blind interruptions in the lipodermatosclerotic tissue, through small incisions or stab wounds, are frequently unsuccessful and incomplete.

A 55-80% recovery of competence in perforators previously demonstrated by duplex examination to be incompetent has been reported following sapheno-femoral and/or sapheno-popliteal ligation alone in patients with superficial and perforator incompetence, but no deep reflux.[14,15] One series reported a relatively low ulcer recurrence rate of 9% at a 3.4 year median follow-up following sapheno-femoral ligation and stripping, without perforator surgery, in patients with superficial and perforator incompetence alone.[16] However, patients with deep vein reflux or obstruction were excluded from this study. Since >50% of patients with venous ulceration have deep vein involvement, a recurrence rate of at least 20% could be predicted in all patients with venous ulcers undergoing superficial reflux ablation alone, without adding SEPS. Based on available data, the addition of SEPS could potentially decrease ulcer recurrence to as low as 10% at 2 years. Level 1 evidence to confirm these results is, however, not available.

Solving the controversy – the NAVUS Trial

Although it is confirmed that SEPS is an effective and safe treatment for interruption of incompetent perforator veins, the role for perforator interruption, with or without ablation of an incompetent superficial system, has not been confirmed. The superiority of surgical treatment over optimal medical treatment also remains to be established in a prospective randomized, multi-center trial. The North American Venous Ulcer Surgery (NAVUS) Trial has been designed to answer the role of surgery in the treatment of venous ulcers.

The NAVUS Trial is planned as a prospective, randomized, multicenter study, with the aim to compare clinical outcome following surgical treatment, consisting of (a) SEPS with concomitant ablation of superficial reflux, or (b) ablation of superficial reflux alone, to optimal medical management, in promoting ulcer healing, preventing ulcer recurrence or new ulceration in patients with chronic venous insufficiency. Patients with perforator incompetence alone, or those presenting with recurrence following ablation of superficial reflux, if randomized to the surgical arm, will be treated with SEPS alone. Patients in the surgical groups also will receive optimal medical therapy in addition to operative intervention. Both male and female patients, age 21 to age 80 years, with active venous ulceration (Class 6) or healed ulcers (Class 5) will be eligible for the trial. Five hundred and sixty patients will be randomized to medical treatment or one of the surgical treatment groups, over a two-year accrual period. The primary endpoint of the study is ulcer recurrence or appearance of new ulceration and the secondary endpoint is to assess the rate and time of ulcer healing. Patients will be followed at least 2 years after surgery to evaluate ulcer recurrence and assess hemodynamic improvement. Tertiary goals of the study are to: 1) identify factors associated with delayed ulcer healing and ulcer recurrence, 2) evaluate venous hemodynamic improvement following surgery, 3) assess quality of life, and 4) compare cost effectiveness of different treatment modalities. Subgroups in the surgical arm will be compared to assess the impact of addition of SEPS to superficial reflux ablation on ulcer healing, recurrence and improvement in venous function.

References

1. Mayberry JC, Moneta GL, Taylor LMJ, Porter JM. Fifteen-year results of ambulatory compression therapy for chronic venous ulcers, *Surgery.* 1991;109:575-81.
2. Erickson CA. Healing of venous ulcers in an ambulatory care program: the role of chronic venous insufficiency and patient compliance, *J Vasc Surg.* 1995;22 :629-36.
3. DePalma RG, Kowallek DL. Venous ulceration: a cross-over study from nonoperative to operative treatment, *J Vasc Surg.* 1996;24:788-92.
4. Gloviczki P, Bergan JJ, Menawat SS, Hobson RW, Kistner RL, Lawrence PF, et al. Safety, feasibility, and early efficacy of subfascial endoscopic perforator surgery: a preliminary report from the North American registry, *J Vasc Surg.* 1997;25:94-105.
5. Pierik EGJM, Wittens CHA, van Urk H. Subfascial endoscopic ligation in the treatment of incompetent perforator veins, *Eur J Vasc Endovasc Surg.* 1995;5:38-41.

6. Gloviczki P, Cambria RA, Rhee RY, Canton LG, McKusick MA. Surgical technique and preliminary results of endoscopic subfascial division of perforating veins, *J Vasc Surg.* 1996;23:517-23.
7. Bergan JJ, Murray J, Greason K. Subfascial endoscopic perforator vein surgery: a preliminary report, *Ann Vasc Surg.* 1996;10:211-9.
8. Gloviczki P, Bergan JJ, Rhodes JM, Canton LG, Harmsen S, Ilstrup DM. Mid-term results of endoscopic perforator vein interruption for chronic venous insufficiency: lessons learned from the North American subfascial endoscopic perforator surgery registry. The North American Study Group, *J Vasc Surg.* 1999;29:489-502.
9. Linton RR. The operative treatment of varicose veins and ulcers, based upon a classification of these lesions, *Ann Surg.* 1938;107:582-93.
10. Stuart WP, Adam DJ, Bradbury AW, Ruckley CV. Subfascial endoscopic perforator surgery is associated with significantly less morbidity and shorter hospital stay than open operation (Linton's procedure), *Br J Surg.* 1997;84: 1364-5.
11. Pierik EG, van Urk H, Hop WC, Wittens CH. Endoscopic versus open subfascial division of incompetent perforating veins in the treatment of venous leg ulceration: a randomized trial, *J Vasc Surg.* 1997;26:1049-54.
12. Padberg FTJ, Pappas PJ, Araki CT, Back TL, Hobson RW. Hemodynamic and clinical improvement after superficial vein ablation in primary combined venous insufficiency with ulceration [see comments], *J Vasc Surg.* 1996;24: 711-8.
13. Sales CM, Bilof ML, Petrillo KA, Luka NL. Correction of lower extremity deep venous incompetence by ablation of superficial venous reflux, *Ann Vasc Surg.* 1996;10:186-9.
14. Stuart WP, Adam DJ, Allan PL, Ruckley CV, Bradbury AW. Saphenous surgery does not correct perforator incompetence in the presence of deep venous reflux, *J Vasc Surg.* 1998;28:834-8.
15. Campbell, W. A. and West, A. Duplex ultrasound audit of operative treatment of primary varicose veins, *Phlebobiology '95 Phlebology.* 1995;(Suppl 1):407-409.
16. Darke SG, Penfold C. Venous ulceration and saphenous ligation, *European Journal of Vascular Surgery.* 1992;6:4-9.

Table 1.– Results of non-operative management for advanced chronic venous insufficiency

Author, Year	Total Limbs*	Recurrence No. (%)	Follow up (mths)
Anning, '56	100	59 (59)	64
Kitahara, '82	59	8 (14)	12
Monk, '82	77	58 (75)	12
Negus, '85	25**	17 (68)	-
Mayberry, ' 91	73	24 (33)	36
DePalma, '92	11	11 (100)	24
Erickson, '95	90	52 (58)	10
Samson, '96	53	23 (43)	28
TOTAL	**488**	**252 (52)**	**27**

* Class 5 limbs + Class 6 limbs after ulcer healing, ** Class 5 limbs only

DISCUSSION

DR. BURNAND: Peter, I don't want to argue again about recurrence rates. I think you're going to do this study and that's going to give us the answer, and I think you should do the study. The question I'd like to come back to which is also from the first two speakers is the question -- and this was from the Dutch group particularly that did it -- is whether you believe that dealing with the perforating veins is going to actually heal the ulcer faster? I think that ulcers heal at a set rate and that nothing you do is going to improve on that. I agree with everything that Greg said. I think Philip is barking totally up the wrong tree because I don't think we should be looking for drugs that encourage keratinocytes to migrate across ulcers faster. We should be looking at drugs that block the factors that inhibit keratinocytes from migrating and adhering. The real question is will SEPS actually speed the healing rate of ulcers that otherwise wouldn't heal. Would you like to address that specific point?

DR. GLOVICZKI: I think that's a very important question, and I think only a multicenter randomized study like the NAVUS (North American Venous Ulcer Surgery) Trial will give us the answers. We frequently compare apples to oranges. I mean, there are patients with large ulcers and small ulcers, post-thrombotic ulcers and varicose ulcers, and there is such a variety of these in most studies that it is almost impossible to really tell whether there is indeed an effect on it. Of all the studies including our Mayo Clinic studies, and the North American SEPS study, where indeed the results were almost dismal because of the initial experience of the participating surgeons, the rate of ulcer healing was three times as fast as the healing that Greg Moneta reported from Portland.

DR. COLERIDGE SMITH: To respond to what Kevin was saying, the intention of my presentation was to say that if you find a drug or drugs which address the underlying mechanism causing the venous ulceration, that will modify the venous ulcer healing rate, and I think that things which actually interfere with the healing mechanism themselves are irrelevant. I have yet to see any evidence that healing is impaired in venous ulceration. Ulcers don't heal in my view because the thing which caused the ulcer to appear in the first place is still there, whatever that may be.

Table 2.– Results of SEPS in patients with advanced chronic venous insufficiency

Author, Year / Ablation	SEPS + Superficial		SEPS alone		Follow up (months)
	Total Limbs*	Ulcer recurrence No (%)	Total Limbs*	Ulcer recurrence No (%)	
Jugenheimer, '92	-	-	16	0 (0)	27
Pierik, '95	4	0 (0)	34	1(3)	44
Gloviczki, '96	6	0 (0)	1	0 (0)	10
Padberg, '96	11	0 (0)	-	-	16
Bergan, '96	31	0 (0)	-	-	12
Wolters, '96	-	-	26	2 (8)	24
DePalma, 96	7	1 (14)	3	1 (33)	24
Sparks, '97	12	0 (0)	7	0 (0)	9
Pierik, '97	14	0 (0)	3	0 (0)	12
Rhodes, '98	38	4 (11)	4	1 (25)	24
NASEPS, '98	68	15 (22)	38	11(29)	24
Murray, '99	20	2 (10)	18	2 (11)	20
TOTAL	**211**	**22 (10)**	**150**	**18 (12)**	**23**

*Class 5 limbs + Class 6 limbs after ulcer healing

DR. DEPALMA: It's still there, but the SEPS gets rid of it perhaps?

DR. COLERIDGE SMITH: What we do with either superficial venous surgery, if that's what's required, or with SEPS is to remove the venous hypertension which causes the damage to the skin.

DR. BURNAND: That prevents recurrence, it doesn't necessarily speed healing. The fact is that keratinocytes multiply at a certain rate, and they migrate at a certain rate, and there's no evidence as yet, that I am aware of it, that anything speeds this process. There's quite a lot of evidence under some circumstances that some ulcers never heal, and it's no good pretending that this doesn't happen. Come on to our clinic. We do all the things that Greg has talked about and that you've talked about. The fact is that ten percent of venous ulcers don't heal with compression treatment.

DR. COLERIDGE SMITH: And I would argue that is because the thing that caused them in the first place is still there along with the susceptibility of the patient to venous ulceration.

DR. GLOVICZKI: We know historically that when we put the patient in the hospital, elevate the leg, the ulcer heals faster. So if you have a technique which decreases ambulatory venous hypertension, I believe it helps healing the ulcer faster in ambulatory patients.

DR. EKLOF: Could you comment, Mr. Moderator, on the study? You should be neutral, but what do you think about the study that Peter is proposing?

DR. DEPALMA: What do I think about it? As I look at the number of combinations that are presented -- and we make our living in my state based on odds -- I see factorial 5 groups in that study. You know the study will be great if you can sort out the factorial 5 groups and get them compared; that is exactly my problem with prospective randomized studies. I think that Dr. Hull discussed it yesterday as well. So that ends my comment about it. I'd be willing to see, but with an open mind, if you can get appropriate CEAP classifications of the cohorts, that would be the number initial data required for exact comparisons.

CHRONIC VENOUS ULCER: HOW CORRECTION OF SUPERFICIAL REFLUX ALTERS THE PATHOPHYSIOLOGY

John J. Bergan, MD, FACS, Hon, FRCS(Eng)
University of California, San Diego
San Diego, California, USA

Chronic venous insufficiency manifests itself as hyperpigmentation, induration of the epidermis, dermis and subcutaneous tissue and venous ulceration. Histologically, capillary microscopy shows capillary proliferation which is best explained by elongation of capillary loops rather than increase in number of capillaries. The increased area of endothelium becomes a target for deposition of intercellular adhesion molecules and leukocytes. Leukocytes penetrate the endothelial intercellular barriers and are found in the subcutaneous interstitial tissues. The cells have been identified as macrophages and T lymphocytes.

The hemodynamic forces which act are those of gravitational reflux through axial veins and compartment pressure transmission through failed perforating vein valves. Correction of superficial reflux implies removal of the gravitational forces of venous hypertension and when this is combined with perforating vein interruption, the effects are to decrease venous hypertension in the skin and subcutaneous tissues. It is generally agreed that removing refluxing saphenous veins and their refluxing tributaries decreases distal venous hypertension. What is less well known is that deep venous reflux of primary origin rather than secondary to venous thrombosis is also improved by removing superficial reflux.

Increased dilation of the deep venous system accompanying superficial venous reflux was described by Fischer and Siebrecht[1] in a phlebographic study as early as 1970. Fischer called attention to the fact that greater dilation of the deep veins was seen in the absence of post-thrombotic complications. In limbs with true post-thrombotic venous changes, these could be identified on phlebograms and the deep veins were found to be more constricted than in those limbs which exhibited superficial reflux and had no findings of venous thrombosis.

Our own observations in La Jolla have noted an increased diameter of deep veins that correlate with the presence of reflux.[2] Some have suggested that correction of superficial reflux could be accomplished by narrowing of the valve annulus in incompetent saphenous veins.

Deep venous insufficiency has been found by others to exist in conjunction with saphenous venous insufficiency. This was considered to be a purely radiologic diagnosis before the advent of duplex ultrasound. The increased volume blood flow caused by saphenous reflux with reentry through perforating veins has been found to elongate and kink the femoral and popliteal veins as well as dilate the femoro-popliteal junction. Correction of superficial reflux has been found to restore perforating vein competency, and these findings together suggest that volume and perhaps velocity of blood flow in altering shear stress on the endothelium modifies the diameter and length of affected venous segments. Venous dilation and subsequent valvular insufficiency in response to such an increased volume flow may be dependent upon wall shear stress. This would be analogous to arterial elongation occurring proximal to chronic arteriovenous fistulas.

We have reported the extent of improvement in venous physiology which follows saphenous vein stripping.[3] Total ablation of deep vein reflux in 27 of 29 limbs was the focus of our report. For the most part, the patients and the limbs reported at that time were early cases of venous insufficiency rather than classes 4, 5, and 6 of the CEAP classes. Four limbs were in what would now be classes 4, 5, and 6, five were in what would be in class 3, and the remainder of the 29 limbs were in class 2.

Labropoulos has reported on the same phenomenon. After excluding patients with previous deep venous thrombosis, Labropoulos studied 139 limbs.[4] Eighty-four percent (84%) of these had reflux at the sapheno-femoral junction and 17% had reflux at the sapheno-popliteal junction. Femoral or deep popliteal reflux was present in 22% of these limbs and these were the focus of the study. Reflux was segmental in 28 of the 31 limbs and was limited to the area of the junction in 25 of these. The mean duration of deep venous reflux was 0.9 seconds and ranged from 0.6 to 3.7 seconds. An important feature of this was that this duration of reflux was significantly shorter than the reflux in the superficial veins which

averaged 2.6 seconds (p = 0.0001). Manual occlusion of the incompetent superficial veins reduced the duration of deep venous reflux but in this acute observation, the reflux was not totally abolished. It was found that the presence of deep venous reflux was associated with junctional reflux of high peak velocity and longer duration. Labropoulos concluded that the deep venous reflux characterized by being segmental and of short duration was associated with the presence of sapheno-femoral or sapheno-popliteal incompetence which had a high peak velocity and long duration of flow. He agreed that these findings explained why correction of superficial reflux alone abolishes deep venous insufficiency.

Assuming that superficial reflux and deep reflux produce distal venous hypertension, and that perforating vein incompetence transmits both static and dynamic exercise pressure to the skin, it is not surprising that in some limbs lipodermatosclerosis and ulceration occur and in others skin changes are absent. The differentiating factor between these extremes is, more likely than not, white blood cell trapping and activation. Limbs with normal skin would have an absence or decrease in trapping of leukocytes while those with the most profound changes would have maximum tissue destruction by the toxic factors liberated by activated leukocytes.

With that in mind, the combined operations of removal of axial venous hypertension and removal of compartmental venous hypertension by perforator vein interruption changes the pathophysiology of chronic venous insufficiency in two ways. The first is correction of the venous hypertensive effect and the second, correction of the activation of leukocytes in the dermatosclerotic skin and areas of venous ulceration.

References

1. Fischer H, Siebrecht H. Das kaliber der tiefen unterschenkelvenen bei der primaren varicose und beim postthrombotischen syndrome (Eine phlebographische Studie), *Der Hautarzt.* 1970;5:205-11.
2. Walsh JC, Bergan JJ, Moulton SL, Beeman S. Proximal reflux adversely affects distal venous function, *Vasc Surg.* 1996;30:89-96.
3. Walsh JC, Bergan JJ, Beeman S, Comer TP. Femoral venous reflux abolished by greater saphenous vein stripping, *Ann Vasc Surg.* 1994; 8:566-70.
4. Labropoulos N, Leon M, Nicolaides AN, Giannoukas AD, Volteas N, Chan P. Superficial venous insufficiency: Correlation of anatomic extent of reflux with clinical symptoms and signs, *J Vasc Surg.* 1994;20:953-58.

DISCUSSION

DR. BURNAND: I think there's not much doubt that dealing with the saphenous vein will improve some patients with ulceration. It will prevent recurrence, and as you've shown, there are some very nice studies that support this hypothesis. We come back to the same question again, although it has two parts. One is: do you prevent recurrence? Two is: do you heal the ulcer faster? I don't think there's any evidence from any of the literature to date that stripping out the long saphenous vein makes the ulcer heal faster. That's a study that needs to be done. In terms of preventing recurrence, as you say, you've got to be selective in the patients that you strip the long saphenous vein in. It's not much good doing it in post-thrombotic legs with severe obstruction where the long saphenous is their only outflow.

DR. BERGAN: Clinically patients with some residual of the postphlebitic syndrome with some obstruction have been markedly benefited by stripping out the refluxing saphenous vein. I think we'll hear more about that from Dr. Raju and Dr. Neglen.

DR. STRANDNESS: I have a question of the panel. You know, a few years ago we did a study looking at levels of incompetence in patients who had a previous history of DVT with or without an ulcer, and one of the striking findings in our study was if they didn't have an ulcer, the greater saphenous vein was competent. But in the group that had developed a post-thrombotic ulcer, the greater saphenous vein was invariably incompetent, and I wonder if any members of the panel have any possible explanation for this. Why should the greater saphenous vein become incompetent from a previous history of DVT and not in some patients but in others?

DR. BURNAND: Well, I think the greater saphenous vein becomes incompetent in patients where there is obstruction. All the studies that we've ever done have shown that if you actually interrupt the saphenous under these circumstances, you can actually make the leg considerably worse. So our experience is diametrically opposed to yours. I think that the long saphenous vein can be a very important collateral. You have some patients where it may be the only collateral out of the leg, and anyone who strips that must be criminally insane in my view.

DR. BERGAN: However, there's abundant clinical evidence that that statement is false.

DR. PERRIN: You have quoted the three studies in which superficial venous surgery has improved deep venous reflux, but when you look carefully at this study, the majority of the patient's reflux were graded two or three according to Kistner classification and very few who had reflux graded 4 were improved.

DR. DEPALMA: In other words, your findings are negative.

DR. BERGAN: Well, now that's true, but I'm only addressing one of the variables in the equation. I'm certainly not against interrupting the perforating vein. I'm not against compression. I'm only taking the one characteristic assigned to me, that superficial reflux contributes to venous hypertension and should be part of the treatment.

DR. ABU-BAKER: So can stripping produce recurrent veins because of the main huntarian perforators were not ligated and then produce angiogenesis?

DR. BERGAN: Taking out the saphenous vein in the thigh will in most cases interrupt the Huntarian and the Dodd perforating veins. There are exceptions, of course, because veins don't read the anatomy books. Angiogenesis is an extremely interesting subject which could occupy the entire meeting. I'd rather not address that right now because I don't think we know enough about it.

HOW MY METHOD OF TREATMENT CHANGES THE PATHOPHYSIOLOGY TO HEAL THE ULCER AND PREVENT RECURRENCE – REPARING PRIMARY REFLUX

Michel Perrin, MD
University of Grenoble
Grenoble, France

The treatment has two aims: To heal the ulcer and prevent its recurrence.

Healing the ulcer: If the patient can walk with compression, an unmovable elastic bandage is applied and changed every 8-10 days.

Active reeducation of tibiotarsal joint is started when needed when the ulcer has become painless.

In case of non-healing after 2 months, the patient is hospitalized for bed rest. In very selected cases (large ulcer, extensive associated lipodermatosclerosis) "Shave therapy" is undertaken and followed by skin graft (8-12 days later), usually mesh graft.

Preventing recurrence: Non invasive investigations (Diagnosis level 2) are undertaken in order to precise hemodynamics. Primary deep vein reflux (superficial, deep, perforator) can be identified in almost all cases by Duplex scan. When primary deep vein reflux is identified, invasive investigations (ascending and descending Phlebography, AVP) are performed in absence of contraindication for Deep Venous Reflux surgery. We consider non-correctable coagulopathy (unusual in this etiology), stiff ankle after reeducation and nonactive patient as contraindications.

The question that emerges is what patients will benefit of Deep Venous Reconstructive Surgery (DVRS) when deep vein reflux is identified? Surgery may be considered:

- After failure of a correctly applied conservative treatment (compression).
- In patients who had been previously operated of their superficial insufficiency and/or perforator insufficiency when the ulcer recurs.
- When patients have a combination of venous superficial, and/or perforator insufficiency and deep venous reflux two therapeutic options are possible:

1st Option: Surgery of superficial venous insufficiency or/and perforator ligation (SEPS) followed by long-term compression are performed as first step and DVRS considered after failure of this treatment.

2nd Option: DVRS in combination with surgery of superficial venous insufficiency and/or perforator ligation are carried out at the same time.

Our policy is:
First option is chosen when Venous Refill Time (VRT) is significantly improved by tourniquet and above 12s., deep vein reflux (according to Kistner) grade 3 and feasibility of valve repair questionable on ascending and descending phlebography.

Second option is preferred when VRT is <12s. with tourniquet, deep vein reflux grade 4 and identification of a valve repairable at the femoral or popliteal level. When combined surgery is scheduled, surgery of superficial venous insufficiency and/or perforator ligation is undertaken 2 or 3 days before valve repair.

We have not evaluated our personal data in option number one. Conversely we have results with the long-term follow-up (12-96 months -average 64) in 24 patients (C6) that have been treated according to option 2. One ulcer had not healed (4.1%) and three had recurred (12%). No or minor reflux had been identified in 18 and major reflux in 5 at the last duplex scan investigation. Related to the small number of patients included there is no significant correlation between clinical and hemodynamic (duplex scanning) results (P= 0.1). VRT was normalized in 68% after valve repair. When there is a component of distal post thrombotic disease (9 patients) results provided by valve repair are less satisfactory (P=0.03) for clinical results and (P= 0.05) for hemodynamics than in PVI. These personal results are in accordance with those published in the literature (Kistner, Raju, and Sottiurai)

DISCUSSION

DR. ENRICI: It's very interesting data, Dr. Perrin. I think the best operation to do is the valvuloplasty, and I want to ask you when you chose internal valvuloplasty versus external valvuloplasty.

DR. PERRIN: My reported results were from internal valvuloplasty.

HOW MY METHOD OF TREATMENT CHANGES THE PATHOPHYSIOLOGY TO HEAL THE ULCER AND PREVENT RECURRENCE-REPAIRING SECONDARY INCOMPETENCE

Seshadri Raju, MD
University of Mississippi Medical Center
Jackson, Mississippi, USA

The pathology of secondary incompetence is complex with associated obstructive and calf pump changes; collateral reflux is a major component as well. Post-thrombotic valve reflux has been traditionally attributed to the destruction of the valve structure by the organizing process. There is evidence that the process is more complex than this simplistic view. Approximately 25% of reconstructed valves in our experience had intact valve cusps despite clear evidence of trabeculae and other post-thrombotic changes around them.[1] Direct repair of these valves was feasible. In some other cases, a sleeve of perivenous fibrosis appears to propagate from the area of thrombus spreading to envelope adjoining valve segments not directly involved in the thrombotic process. The resulting constriction and foreshortening of the valve housing appears to result in secondary incompetence of previously competent intact valve cusps. These are also amenable to direct valve repair techniques. Collateral reflux occurs through dilated axio-axial or tributary axial collaterals. The profunda femoris particularly plays a significant role in this regard. As a collateral pathway, the profunda femoris valve structures appear to become secondarily incompetent from dilatation even though they were not involved in the thrombotic process. On the other hand the collateral potential of superficial subcutaneous veins in post-thrombotic syndrome has been unduly exaggerated in the past. It appears that the outflow function of these "secondary" varicosities is very limited. They frequently function as major pathways of reflux significantly contributing to the pathology of post-thrombotic syndrome, over-shadowing any benefit derived from their outflow potential to the overall calf pump function.

We have taken an aggressive approach to the post-thrombotic limb, with the strategy of correcting, repairing or eliminating as many sources of reflux as practically feasible:

1. Saphenous reflux is eliminated by stripping, even though venograms may give the appearance of the saphenous functioning as

a collateral around the obstructed femoropopliteal segment. Resistance calculations and outflow measurements clearly indicate (n=51) that stripping did not compromise overall outflow but resulted in improvement of reflux parameters.[2] No adverse clinical manifestations indicating outflow compromise was observed in any of these cases.

2. Multiple valve reconstructions: when the femoral area is explored, both the superficial femoral and profunda femoris are dissected out and the valve stations tested for reflux. Both valves are repaired when both are refluxive as is frequently the case. A combination of techniques including direct valve repairs, axillary valve transfers or even cryovalves are utilized as necessary to achieve this objective. Trans-commissural repairs are fast and are particularly utilitarian in this regard.[3] The entire femoral confluence can be reconstructed if a suitable configuration of basilic, brachial and axillary confluence is available for use.[4] Thirty to 40 % of axillary valve are leaky in situ and should be repaired before transfer. The rapid trans-commissural technique was the most frequently used for this purpose. Poorly recanalized superficial femoral veins with little outflow function can be divided rather than repaired if there is axial transformation of the profunda femoris.[5] The main repair in these cases will involve the enlarged profunda femoris vein. Actuarial ulcer healing in such profunda femoris repairs were 66% at 5 yrs. The adequacy and success of valve repairs is monitored by ambulatory pressure measurement, particularly venous refilling time (VFT)[6] and venous filling index (VFI90) with Air-plethysmography. A post-operative VFT that stayed below 5 seconds was associated with high recurrence[4] and persistence of symptoms. It is our current policy to approach additional sites for valve reconstruction (IE Popliteal) as a second stage in such cases to improve the VFT beyond 5 seconds. In about 20% of cases the popliteal was the initial site of valve repair as this valve structure appeared to be relatively uninvolved in the thrombotic process compared to the femoral area on preoperative venograms.

3. "Blind" explorations:[4] In several preoperative venograms the deep veins did not visualize and only the superficial veins appeared to fill with contrast. It is our premise that the limb cannot survive on a superficial venous network alone and adequate deep veins are bound to be present. We surmised that this venographic appearance is an artifact due to the complex flow patterns and regional pressure variations in the post-thrombotic extremity. "Blind" explorations of the femoral area in the groin has yielded patent repairable valve segments in the majority of such cases, despite venographic non-visualization. The saphenous was refluxive and was stripped in such cases without clinical or hemodynamic malsequalae even though it appeared to be the only contrast visualized outflow tract.

4. Trabeculated post-thrombotic veins: Axillary vein transfers to trabeculated femoral veins have maintained an acturial patency of >80% up to 10 yrs (n=83) with actuarial ulcer healing of 61%.[4]

5. Combined obstruction reflux: Obstructed or stenosed iliac venous segments are now stented first before valve reconstruction. Actuarial patency of >85% (2yrs) has been observed with impressive relief of the pain and swelling components of post-thrombotic syndrome. Thirty percent of open ulcers have been noted to heal as well following the stenting procedure alone allowing deferment of valve reconstruction. When disobiliteration of the obstructed iliac segment has not been feasible, we have proceeded with valve reconstruction below the obstructed segment nevertheless (n=15).[3] Acturial ulcer healing and repair patency in these cases has not been different from valve reconstructions undertaken below open iliac venous segments.

References

1. Raju S, Fredericks RK, Hudson A, Fountain T, Neglen P, Devidas M. Venous valve station changes in 'Primary' and Post-thrombotic Reflux: An analysis of 149 cases, *Ann of Vasc Surg.* In Press.
2. Raju S, Easterwood L, Fountain T, Fredericks R, Neglen PN. Saphenectomy in the presence of chronic venous obstruction, *Surgery.* 1998;123:637-44.
3. Raju S, Hardy JD. Technical options in venous valve reconstruction, *Am J Surg.* 1997;173:301-07.
4. Raju S, Neglen PN, Doolittle J, Meydrech EF. Axillary vein transfer in trabeculated post-thrombotic veins, *J Vasc Surg.* 1999;29:1050-64.
5. Raju S, Fountain T, Neglen PN, Devidas M. Axial transformation of the profunda femoris vein, *J Vasc Surg.* 1998;27:651-9.
6. Raju S, Neglen PN, Carr-White PA, Fredericks RK, Devidas M. Ambulatory venous hypertension: component analysis in 373 limbs, *Vasc Surg.* 199;33:257-67.

CONTROVERSIES IN DIAGNOSIS – CLINICAL EVALUATION IN THE OFFICE

Kenneth A. Myers, MS, FACS, FRACS
Monash Medical Centre and Epworth Hospital
Melbourne, Australia

A major function of the consultation is to determine why the patient has been referred. Many asymptomatic patients present to ask about the risk of future serious complications. Reassurance that the risk is small and that treatment can be instituted later in the few who do progress will frequently result in grateful relief that treatment can be deferred. Others demand treatment for cosmetic reasons and there must be frank discussion as to realistic expectations of results. Symptomatic patients should be carefully assessed from the history and examination to search for characteristic features of alternate ischaemic, arthritic or neuralgic causes for pain, perhaps leading to appropriate investigations. Symptoms from venous disease alone are usually not as characteristic. Further, marked venous aching or swelling can be associated with minimal or no varicose veins on examination. Complications of thrombophlebitis, lipodermatosclerosis, venous eczema or ulceration can usually be confidently diagnosed from the examination although these limbs will usually require further investigation, and mixed disease is common.

Much of the history revolves around enquiry from patients as to the cause of their varicose veins. They ask whether they are inherited, due to tight garments, aggravated by crossing their legs, or caused by prolonged standing or straining, at work or from sporting activities. They should be told that apart from pregnancy and a relation to body mass, there is no worthwhile evidence to incriminate any other cause. Enquiry about past deep venous thrombosis is often inconclusive. This must be one of the few diseases shown not to be caused by smoking.

Examination with the patient standing shows whether or not there are varicose veins, reticular veins or telangiectases. Unfortunately, many patients later shown by duplex scanning to have major venous reflux will have minimal or no apparent varicosities. Further, on a

clinical assessment as to whether varicosities affect the greater or lesser saphenous systems or perforators also relates poorly to objective studies by duplex scanning. A positive tourniquet test may support an obvious diagnosis of greater saphenous reflux but tourniquet tests are otherwise of little value. The continuous-wave pocket Doppler does not improve accuracy sufficient to avoid the need for duplex scanning in patients destined for intervention. Planning the best treatment for each patient requires more than office assessment alone. However, the office is the site for careful discussion of the findings from anatomical and physiological investigations to explain why the condition is best treated by conservative measures, sclerotherapy or surgery, and what the risks and reasonable outcome is likely to be.

DISCUSSION

DR. SUMNER: Contrary to what Ken says, I believe that the appearance of the venous ulcer on physical examination is pretty specific. You can often distinguish between an arterial and venous ulcer from across the room. I'm not talking about identifying the underlying venous pathology, which requires additional testing. Otherwise, I suspect that the initial clinical impression in most cases in reasonably accurate.

DR. RAJU: I think I would agree with that. Dr. Myers is going to respond.

DR. MYERS: Well, I omitted to mention that in my examination I take great care to feel the pulses, listen for bruits, assess for arterial disease, and of course, there is a group of patients, who present with arterial ulcers. I can tell that from the history of pain, and looking at the ulcer feeling the pulses. This is no longer a venous problem and it belongs to another meeting. The patient that I was talking about is the one who clearly has a venous ulcer with pigmentation around it, and where I suspect there may be an element of arterial disease. I want to be quite sure how large this element is. I want to know whether that's something I should treat first or whether I can ignore it. It is this group of patients that I really have a lot of difficulty assessing and that's where the vascular laboratory greatly helps me.

DR. PADBERG: One thing which I've noticed in my own experience, as the patients get older, which they seem to be throughout the world, identifying the arterial ulcer from the venous ulcer at the initial visit may be somewhat straightforward if indeed they have a fair amount of arterial disease, but after the patient has been in your clinics for many years with his third and fourth recurrence, he can sometimes slip up on you with a deterioration in his arterial circulation. You may not apply the same intensity of examination as your initial evaluation. You've already seen your ankle/brachial index. You did it four years ago. Well, you ask, why do I need to redo it again? It's those patients that we need to be particularly tuned to, because they're the ones whose ulcers really get big, and then you ask yourself, well, why is all of a sudden this wound deteriorating? You check the simple thing first and forget that it can change. Reassessment is appropriate when the wound or patient's response changes. One other comment I might make to your examination, I have not thrown away my hand-held Doppler. I still use it routinely with my clinical examination in the standing position to evaluate the patients for simple incompetence. This does help to identify the presence of superficial venous disease, and helps to direct the workup and treatment to patients who have venous disease and away for those who don't have venous disease but yet have recurrent ulceration of another form.

THE OFFICE - THE HAND-HELD DOPPLER

David S. Sumner, MD
Southern Illinois University School of Medicine
Springfield, Illinois, USA

Chronic venous insufficiency is ordinarily easily diagnosed in the clinic by inspecting the leg. Physical findings are characteristic and are among the most specific of any disease. But physical examination, other than identifying varicose veins, provides little information concerning the presence, location, and extent of venous obstruction or valvular incompetence.

Prior to the introduction of duplex scanning, examinations performed with continuous-wave (cw) Doppler devices were the only noninvasive way of obtaining objective anatomic information pertaining to the diagnosis of chronic venous insufficiency. This technique, while less precise than duplex scanning, still remains useful in the office or clinic, where duplex scanning may not be readily available, and may provide sufficient information in patients in whom compression therapy is selected as the initial therapeutic approach.

Methods

Any of a number of Doppler instruments are suitable, including those that are completely hand-held, but there are some advantages to using directional instruments with panel meters, especially when investigating venous incompetence. Studies are initially conducted in a warm room with the patient supine, tilted slightly foot down, and his or her legs in a relaxed position. At all levels of the leg, the first step is to identify the corresponding artery. The probe is then shifted slightly in the proper direction to optimize the venous signal. (In the absence of a B-mode image, this approach is critical to the identification of the proper vein.) Using signals from the corresponding artery as a guide, the examiner studies the common femoral, superficial femoral, popliteal, and posterior tibial veins as well as the above-knee and below knee greater saphenous veins. Normal venous signals are phasic with respiration and are easily augmented by gentle limb compression. Particular attention should be given to "spontaneous" (unaugmented) signals, which are always present in normal limbs at the popliteal and more proximal levels and are frequently present in the posterior tibial and saphenous veins at the ankle.[1]

Absence of an augmented signal indicates that the insonated venous segment is totally occluded. Weak signals, however, may be obtained from adjacent collaterals or from partially recanalized veins. Although normal spontaneous signals imply patency, they can be obtained when veins are recanalized or when only one of a pair of duplicated veins is occluded. "Continuous" (non-phasic) signals are obtained from a patent vein when its axial continuation is occluded. (For example, a continuous signal in the common femoral vein implies obstruction of the iliac vein.) Increased flow in superficial veins is good but indirect evidence of deep venous obstruction.

Venous valvular incompetence can be detected by demonstrating flow reversal in a venous segment.[1] At the common femoral level, a Valsalva maneuver will result in total cessation of phasic flow when there is at least one competent valve in the iliac or common femoral veins. Reflux at this level is indicative of valvular incompetence. Although a Valsalva maneuver may produce retrograde flow as far distally as the posterior tibial or saphenous vein at the ankle when all intervening valves are incompetent, the presence of a single competent valve at any level proximal to the site of the probe will prevent reflux.

To detect segmental incompetence below the groin, limb compression must be used. Compression above the probe closes all intervening competent valves, resulting in temporary cessation of flow (Figure). If, however, the intervening valves are incompetent, flow reversal is detected at the probe site during limb compression followed by an antegrade surge of blood when compression is released. This produces an easily recognized "to-and-fro" signal. When the leg is compressed below the site of the probe, an antegrade flow signal is first heard. Upon release of compression, flow ceases temporarily when the intervening valves are competent but reverses when the valves are incompetent, again producing a "to-and-fro" sound.

While these studies can be performed with the patient supine, the standing position more closely approximates the physiologic conditions in which reflux is important.[2] Manual or tourniquet compression of the greater saphenous vein at the upper thigh or the lesser saphenous vein at the upper calf may clarify whether reflux in the common femoral vein or popliteal vein is due to incompetence of the superficial or deep systems.

Limitations and Accuracy

A major drawback of hand-held Doppler examinations is the inability to be certain which veins are being studied. Errors occur when veins are duplicated or when collateral veins or tributary veins are inadvertently insonated. With the possible exception of the posterior tibial veins, deep calf veins and intramuscular veins cannot be selectively identified. Moreover, the extent of obstruction or the precise location of incompetent valves cannot be determined, and the severity of reflux cannot be estimated. Because of the complicated anatomy, attempts to detect and accurately locate incompetent perforating veins with the cw-Doppler have been disappointing.[3,4]

There is little objective information validating the accuracy of cw-Doppler for diagnosing valvular incompetence. According to Nicolaides et al.,[5] popliteal vein reflux can be detected with a sensitivity of 100% and a specificity of 92%. Evers and Wupperman[6] reported a sensitivity of 71% and a specificity of 92% for identifying the post-thrombotic syndrome. Greater saphenous vein incompetence was diagnosed with a sensitivity of 73% and a specificity of 85% in a study reported by McMullin and Coleridge Smith,[7] but the sensitivity for lesser saphenous vein incompetence was only 33%.

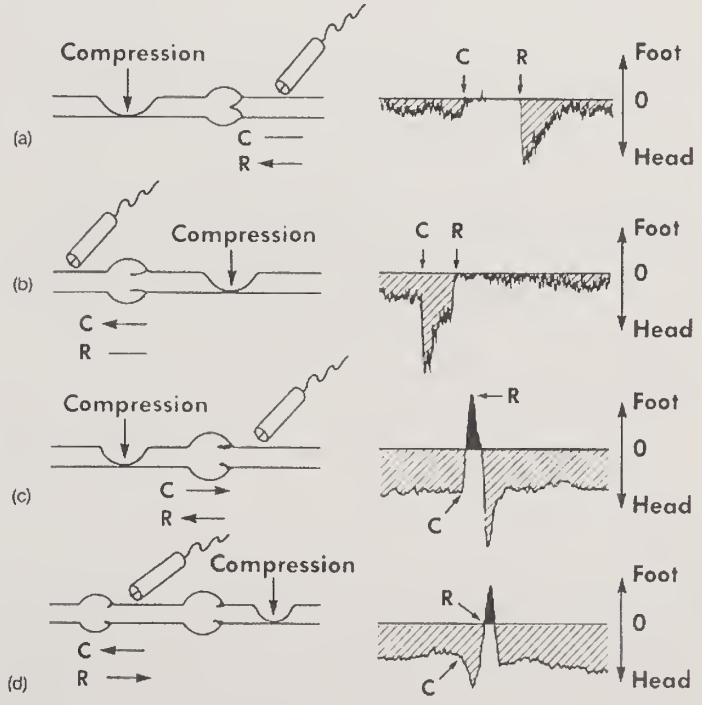
Applications

The hand-held Doppler provides a quick and readily available method for verifying the diagnosis of chronic venous insufficiency in outpatients. Concomitant arterial obstruction can be detected and, if present, its severity evaluated by measuring the ankle/brachial pressure index. If nonoperative measures (elastic stockings, Unna boots, or non-elastic support) are chosen as the initial therapeutic approach, no other testing is required. When valvuloplasty, valve transplantation, venous bypass, or perforator ligation is contemplated in patients with recalcitrant disease, further studies with duplex scanning are necessary to define more precisely the location and extent of valvular incompetence or chronic venous obstruction.

In patients with uncomplicated primary varicose veins, hand-held Doppler surveys usually suffice to identify incompetent superficial venous segments and to locate major communications with the deep system that feed the varicosities - information vital to the effective treatment of this disease.

References

1. Sumner DS. Direct noninvasive tests for the evaluation of chronic venous obstruction and valvular incompetence. In Gloviczki P, Yao JST, eds. *Handbook of Venous Disorders*. London: Chapman & Hall, 1996:130-151.
2. Nicolaides AN, Sumner DS. *Investigation of Patients with Deep Vein Thrombosis and Chronic Venous Insufficiency*. London: Med-Orion, 1991.
3. O'Donnell TF, Burnand KG, Clemenson G, Lea Thomas M, Browse NL. Doppler examination vs clinical and phlebographic detection of the location of incompetent perforating veins: a prospective study, *Arch Surg*. 1977;112:31-35.
4. Schultheiss R, Billeter M, Bollinger A, Franzeck UK. Comparison between clinical examination, cw-Doppler ultrasound and colour-duplex sonography in the diagnosis of incompetent perforating veins, *Eur J Vasc Endovasc Surg*. 1997;13:122-126.
5. Nicolaides AN, Fernandes é Fernandes J, Zimmerman H. Doppler ultrasound in the investigation of venous insufficiency. In Nicolaides AN, Yao JST, eds. *Investigation of Vascular Disorders*. New York: Churchill Livingstone, 1981:478-487.
6. Evers EJ, Wuppermann T. Ultrasound diagnosis in post-thrombotic syndrome. Comparative study with color duplex, cw-Doppler and B-image ultrasound. *Ultraschall Med*. 1995;16:259-263.
7. McMullin GM, Coleridge Smith PD. An evaluation of Doppler ultrasound and photoplethysmography in the investigation of venous insufficiency, *Aust N Z J Surg*. 1992;62:270-275.



Legend

Directional Doppler recordings of venous blood responses to limb compression, **C**, and release of compression, **R**: (a) and (b), normal response; (c) and (d), abnormal responses typical of venous valvular incompetence.

AN EVALUATION IN EUROPE OF THE C OF CEAP

André Cornu-Thénard, MD
Saint Antoine Hospital
Paris, France
J.F. Uhl, MD, P.H. Carpentier, MD

Background

Everyone knows the CEAP classification, as it is the most recent, complete and precise and the best structured. It classifies the four main aspects of CVI: Clinical signs, Etiology, Anatomical sites and Pathophysiological problems. A group of three severity scores is added allowing numerical evaluation of the course of the disease. Therefore this classification is ideal.[1]

Objective

To evaluate, in a routine clinical setting, the information associated with each Clinical class of CEAP, and the consistency of their hierarchy.

Material

Patients residing in Europe and presenting with venous disease. Data were immediately checked into a computer program, called the European Phlebology File (EPF). This program created by a European group of 30 angiologists in 1997, has been set up in order to make Venous Epidemiological Investigations. It includes elements of the CEAP classification, but also a number of items not included in the C of CEAP. It automatically calculates C, E, A, P and the three scores for each patient. It also uses a data entry system, which can be transferred by e-mail. With this EPF the CEAP classification can be used in everyday practice.

Method

The preliminary multicentric validation of this new software dedicated to the management of venous diseases made this work possible. Sixty-one angiologists from 10 different European countries entered a total of 872 patients'exhaustive records. The data were analyzed in order to evaluate the information value of each of the 7 Clinical classes (C0 to C6) and to test the consistency of their hierarchical graduation, using both monovariate and multivariate statistical techniques performed through SPSS/PC Software on the database of 1,744 lower limbs.

Result

The population consisted of 872 patients coming from France, Italy, Belgium, Holland, Austria, Germany, Switzerland, UK, Greece and Spain. Seven hundred women (80.3%) and 172 men (19.7%), average 53.1 years old (maximum 100 years minimum 18 years). Their average weight is 68 kg and average height 166 cm. Seventy percent of the female patients had been pregnant. Compression therapy has been used in 30%, sclerotherapy in 23% and previous venous surgery performed in 16% of the patients.

The distribution of the lower extremities according to the 7 Clinical classes of CEAP was relatively homogeneous.

The etiology of CVI consist of primary 82.6% and secondary (post-thrombotic syndrome) 17.4%.

Post-thrombotic syndrome, age greater than median 52 years (p=50%) and history of pregnancy (p=70.4%) were significantly associated with classes of higher order.

Regarding between classes consistency, classes 3rd to 6th classes showed a good hierarchical agreement, although it should be noted that 13.6% of patients with open or cicatricial venous ulcers did not show associated skin changes validating classes 4-5-6.

Excepting the corona phlebectatica, the presence of telangiectasia did not seem to correlate with the other venous signs.

Association pattern of skin changes in class 4 showed that lipodermatosclerosis and atrophie blanche are of more severe significance than pigmentation.

Conclusion

The information summarized by the CEAP clinical classes are of good practical relevance, but is of a composite constitution. Further discussions and works are needed.

References

1. Porter JM, Moneta GL and International Consensus Committee. Reporting standards in venous disease: An update, *J Vasc Surg.* 1995;21:635-645.

DISCUSSION

DR. PADBERG: You mentioned venous eczema as it was missing from CEAP. That also disturbed some of us statewide. Did you include that in the new European classification, and if so, did you differentiate between dry and wet eczema?

DR. CORNU-THENARD: We of course took the item "Eczema" but we didn't mention if it was dry or wet. On the other hand we asked for the size, as for pigmentation, lipodermatosclerosis like it is done for ulcers.

DR. STRANDNESS: Andre, do you have a laptop computer in your examining room so that when you're taking the history and you're doing the examination this is all entered at the time?

DR. CORNU-THENARD: Yes, since the beginning of this year.

DR. RUTHERFORD: This was a very nice presentation. As Andre already knows, there's an ad hoc committee of the American Venous Forum that is working on a similar approach but has gone beyond the clinical score that was included in CEAP. We will be making recommendations for severity scoring along similar lines, and I will present that on Friday. However, I would like to point out that one of the important characteristics you need in such a scoring system is that each of the elements can be graded in levels that can actually reflect change that comes with treatment, and it has to reflect it fairly promptly. In some elements, for example, the induration and subcutaneous fibrosis associated with dermatofibrosis are not going to change very quickly with treatment and unless you can come up with attributes that you can score that will show change, it remains primarily a static classification system. So we need to score elements that will show the effect of treatment and produce a difference in score with treatment, and that's what our committee is aiming for. Therefore, I would like to ask you, have you

compared your scores before and after treatment?

DR. CORNU-THENARD: We didn't do this yet -- The actual idea is to evaluate our computerized phlebological file to see if everything is in. Later on we will try to implement this idea, to compare the score between the first and following examinations.

DR. RAJU: Thank you. I think the point that Bob raised is quite appropriate. -- There's clear evidence that the larger the ulcer it takes much, much longer to heal. I don't know whether that's true of dermatitis. I've seen extensive dermatitis heal pretty rapidly after treatment. There's no time element difference.

SENSORY IMPAIRMENT: A FEATURE OF CHRONIC VENOUS INSUFFICIENCY

Frank Padberg, Jr., MD, FACS
UMDNJ New Jersey Medical School
Newark, New Jersey, USA.

Although not widely recognized clinically, impaired peripheral sensation may feature in the morbidity of chronic venous insufficiency (CVI). Evidence of neuropathy in the foot of limbs with CVI was reported by several investigators.[1,2] Minor trauma, such as scratching from pruritis, will often initiate venous ulceration. Accordingly, we conducted a clinical evaluation of 23 limbs in 14 male patients to determine whether a sensory neuropathy is present, and if so, to determine its extent and distribution.[3]

Sensory thresholds in CEAP Class 2 limbs (n=11) were compared with CEAP class 5 limbs (n=12) at nine different sites on the foot, ankle, calf, thigh, and palm; thenar and hypothenar thresholds were measured as internal controls (Figure). These sites included both those areas usually associated with venous insufficiency and those areas usually not affected by venous insufficiency. Exclusions included diabetes, prior ipsilateral extremity surgery, absence of objective findings of venous insufficiency or other diseases associated with neuropathy.

Sensory thresholds were measured with a pressure aesthesiometer consisting of 20 nylon filaments calibrated to buckle on application of a graduated longitudinal force (F) ranging from 4.5mg to 447Grams. Pressure applied by the Semmes-Weinstein filaments is expressed as the $\log_{10}$ (F in mg)(10). This logarithmic scale expresses the threshold as a linear relationship with corresponding values ranging from 1.65-6.65.[4]

A complete, sensory-motor assessment of the limb consisting of deep tendon reflexes (DTR), vibration, proprioception, motor strength, and light touch, was performed by an experienced neurosurgeon. Venous reflux was determined by duplex ultrasound and air plethysmography.

Results

Sensory thresholds at the most common site of venous ulceration-just proximal to the medial malleolus-were significantly ($p<0.05$) different between CEAP, 2 (median 3.61) and CEAP, 5 (median 4.65) limbs (Table 1). A significantly different median threshold was also observed at four other sites: just proximal to the lateral malleolus, the proximal medial and lateral calf, and the thigh. The remainder of the tested sites were not different between CEAP, 2 and CEAP, 5 limbs (Table 1). Profoundly abnormal examinations were recorded in 3 individuals from class 5 who were unable to appreciate the presence of even the thickest, most rigid (6.65) filament. Morphologic studies from our institution identified destruction of cutaneous nerve fibers in areas subjected to chronic venous hypertension.[3]

Sensory abnormalities coincided with the extent of trophic changes and did not reflect specific dermatomal or cutaneous nerve distributions. In addition to light touch or pinprick, vibration sense and DTR's were also significantly worse in those with severe CVI. The magnitude of the sensory impairment observed in the CEAP, 5 limbs (5.31 and 5.07, Table 2) was similar to that reported as a significant sensory threshold in diabetes or leprosy (5.07).[3,5] In prospective studies, the inability of the diabetic subject to appreciate the application of a 5.07 filament was associated with subsequent ulceration of the plantar surface skin of the foot.[5] Previously determined normal sensory thresholds for the foot and hand are noted in Table 1.[3,5] Prospective identification of limbs at risk would provide a logical opportunity for follow-up evaluation of this potential risk factor for ulcer recurrence in CVI. Although the appropriate level of sensory impairment which would be associated with such increased risk is undetermined at this time, the ease and convenience of this examination lends itself to screening at an initial examination for planning treatment of CVI.

Sensory neuropathy is a feature of severe CVI, and its distribution is coincident with trophic changes. As this is often unappreciated by the patient, it may contribute to the propensity for deterioration from minor trauma.

References

1. Shami SK, Shields DA, Farrah J, Scurr JH, Coleridge Smith PD. Peripheral nerve function in Chronic Venous Insufficiency, *Eur J Vasc Surg.* 1993;7:195-200.
2. Ardron ME, Helme RD, McKernan S. Microvascular skin responses in Elderly people with Varicose Leg Ulcers, *Age and Aging.* 1991;20: 124-128.
3. Padberg FT, Maniker AM, Carmel G, Pappas PJ, Silva MB, Hobson RW II. Sensory Impairment: A feature of Chronic Venous Insufficiency, *J Vasc Surg.* 1999: in press.
4. Levin S, Pearsall G, Ruderman RJ. VonFrey's method of measuring pressure sensibility in the hand: An engineering analysis of the Weinstein-Semmes pressure aesthesiometer, *J Hand Surg.* 1978; 3:211-16.
5. Holewski JJ, Stess RM, Graf PM, Grunfeld C. Aesthesiometry: Quantification of cutaneous pressure sensation in diabetic peripheral neuropathy, *J Rehab Res and Devel.* 1988;25:1-10.

See Table 1 and 2 on next page

DISCUSSION

DR. COLERIDGE SMITH: That's certainly good interesting data, and that follows on from our own investigations. I always regarded the neurological damage as collateral damage, if you like, from all the other inflammatory processes that go on in the skin of patients with venons disease, but clearly with such severe sensory neuropathy, there is a very strong chance that this will contribute to failure of healing and perhaps the likelihood of additional ulcers. In our own work we deliberately looked remote from the site of the ulcer to avoid any local effect which we thought was quite probable and only looked at the nerves which had passed the site of the ulcer going deep to the deep fascia to reach the foot. Even there we found peripheral neuropathy. This was in the smallest nerve fibers which might be those that regulate the microcirculation. So I'm glad to see that our original work has been confirmed by your careful studies.

DR. PADBERG: We have concentrated on demonstrating the

TABLE 1.– Sensory Thresholds were measured at nine different anatomic sites innervated by different nerve roots and cutaneous nerves. CEAP class 2 (mild CVI) and CEAP class 5 (severe CVI) limbs.

Site	Dermatome Peripheral Nerve Trunk	CEAP, 2 (N=11)	p* values	CEAP, 5 (N=12)	Published Normals**	
1. 1st web space	L5-vs-S1	Deep Peroneal N	3.22 (2.44-4.08)	NS	4.08 (2.83-5.07)	3.87±0.07
2. Dorsal foot	L5	Superficial Peroneal N	3.22 (2.44-4.17)	NS	4.24 (2.83-5.07)	3.81±0.07
3. Supramalleolar Medial + 5 cm	L4	Saphenous N	3.61 (2.44-4.17)	.00001	4.65 (4.08-6.65)	
4. Supramalleolar Lateral + 5 cm	S1	Sural N	3.84 (2.44-4.17)	.0039	4.45 (3.84-6.45)	
5. Proximal Calf, Medial +25 cm	L4	Saphenous N	3.22 (2.36-4.08)	.00021	4.24 (3.22-4.94)	
6. Proximal Calf, Lateral + 25cm	L5	Lateral Sural Cutaneous N	3.22 (2.36-4.17)	.007	4.17 (3.22-5.18)	
7. Anterior Thigh, Knee +10 cm	L2-3 vs L3-4	Ant Femoral Cutaneous N	2.83 (2.44-4.17)	.007	3.96 (2.36-6.10)	
8. Palm,Thenar	C7	Median N	3.22 (2.44-3.23)	NS	3.03 (1.65-4.08)	2.44-2.83
9. Palm, Hypo-thenar	T1	Ulnar N	3.22 (2.44-3.84)	NS	3.22 (1.65-4.17)	2.44-2.83

Values for sensory thresholds are expressed as $\log_{10}$(F in mg)(10); Median (Low value-High value), *P values derived from Wilcoxon rank sum test and specified if significant (If p>.05, NS), L, lumbar; S, sacral; C, cervical; T, thoracic; N, nerve. ** Holewski [5] reported as mean±SEM.

TABLE 2.– Least sensitive filament thresholds as determined by different examiners in comparison of CEAP,2 and CEAP,5 limbs.

Table II:	Least Sensitive Filament Threshold—A	Least Sensitive Filament Threshold—B
CEAP,2	4.08 (2.44-4.17)	4.08 (3.22-4.31)
CEAP,5	5.31 (4.17-6.65)	5.07 (4.31-6.65)
P value*	<.0001	<.0001

*P values derived from Wilcox on rank sum test and specified if significant (If p>.05, NS)
Spearman's r=0.75 (p=.0002) for correlation between examiners.

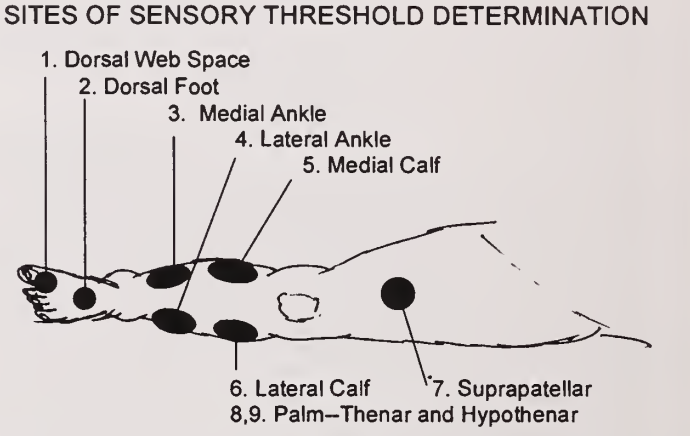


Figure: Numbered anatomic sites used for determination of cutaneous sensory thresholds correspond with the data presented in Table 1.

peripheral and the subcutaneous abnormality; we are looking at this abnormality as a potential measurable risk factor. I think there is evidence supported by your data and by others to suggest that this may also involve the deeper tissues as well. I think we would need more data and more investigation to make this statement. This would, of course, impinge venous hypertension as well as the local inflammatory response. In my own opinion we will probably find that both are involved.

DR. VILLAVICENCIO: Yes. I want to congratulate Frank Padberg for his astute observations that really document what we have seen. We have observed, while operating on people with severe venous hypertension, especially working on the lesser saphenous area of the ankle, that the sural nerve, both in people with chronic venous insufficiency as well a congenital malformation with severe venous insufficiency, and complex varicose veins, that the veins which surround the nerves are very dilated. Often one might confuse the sural nerve with the lesser saphenous vein at the ankle level. This reflects basically that the nervous venous system drains into the general system and is also hypertensive. This might reflect on the findings that Dr. Padberg just has presented to us.

DR. THORPE: I also found your study very interesting. I'd like to offer that we see a lot of the chronic post-thrombotic people which are years out and very severe, but not necessarily C5 or 6 but mostly C4 with bad edema and very hard calves. After we treat them they spontaneously offer that they can feel their leg again. They didn't realize how numb their leg was, and that it feels more like their normal leg or opposite leg. So there's apparently an element of reversible nerve loss that is associated with this chronic severe edema. I'm wondering if you can apply your testing to patients who are C3 and C4 and correlate that to the amount of circumferential edema.

DR. PADBERG: Thank you. That's a good question. Just as

Philip indicated, we avoided the C6 links because of the questions 1) how do you measure the nerve endings in an open ulcer and 2) would that color the result? We are measuring C4 links at this point in time. I would present that data, only we don't have an adequate patient sample with all of the appropriate exclusions to give you the data that you're looking for. The advantage of this test, I think, is that it's very, very simple. It's very straightforward to do. All you need is a set of filaments. You don't even have to buy the big set, I think, to get an estimate of what the level of impairment in an individual patient may be. In the absence of the filaments, simple testing of sharp objects will identify severe impairment. I do think this, there is probably an element of reversibility. As Bob Rutherford suggested earlier, the question of lipodermatosclerosis or fibrosis being reversible is probably less likely. The edema, of course, you've seen respond, and now you're telling us that the nerve complaints, the subjective nerve complaints that you've seen, have also responded. So I think that this is an element which we will need to evaluate as we go on.

DR. ABU-BAKER: So I thank all of you for your good works, but I'd like to ask only one question. Why is the venous ulcer predominantly in the third internal inferior part of the leg, and not on the external side?

DR. MYERS: I think the question is why do we usually have ulcers on the medial side of the ankle, not on the lateral side of the ankle. There's an excellent Israeli study that shows that ulcers on the lateral aspect of the ankle are usually associated with short saphenous reflux whereas ulcers on the medial aspect may be associated either with short or long saphenous reflux. This ignores the deep venous component. We found the same, though not quite as strongly as the Israeli group.

DR. PADBERG: I'll just comment that the neurologic abnormality also points to the lateral ankle as being subject to the insult of the venous hypertension. We too see lateral ulceration. I can't agree that Arie Bass' study was as tight as our own experience, but I believe the concept is valid.

DR. TRIPATHI: This is a question for Frank. Do you think that just peripheral sensory neuropathy is occurring in chronic venous insufficiency, or is there any autonomic neuropathy and have you studied that?

DR. PADBERG: I specifically have not. You actually may want to have Philip answer that question. He was looking at an autonomic neuropathy using the vasodilatory flare response on the sole of the foot.

DR. TRIPATHI: I want to ask whether in chronic venous insufficiency, the deeper venous compartments have autonomic neuropathy? After correction of superficial vein incompetence, we often see some correction of deep vein incompetence and perforator incompetence. I wonder if there is an autonomic neurohumoral role in the reversal of the deep vein incompetence and perforator incompetence?

DR. PADBERG: Like John Bergan and Cliff Sales, we have observed reflux in the deep venous system which corrected as a result of surgical intervention on the superficial system. I would expect that if the reflux is severe enough to create this type of neurologic abnormality, that we would be able to measure an improvement there as well. It will probably take some time to get enough patients that fit the category necessary to make that conclusion.

DR. COLERIDGE SMITH: Exactly the same point occurred to me, and we never got around to investigating the autonomic parts of the system, but the same class of nerve fibers where we found neuropathy would be responsible for autonomic control of the micro circulation in the leg including, the deep compartments. There is a paper which suggests that this actually is the case, that there is an autonomic nerve problem in people with chronic venous disease distal to the level of the venous disease.

RELIABILITY OF CLINICAL DIAGNOSIS IN VARICOSE VEINS: A PROSPECTIVE COMPARISON BETWEEN CLINICAL EXAMINATION AND DUPLEX ULTRASOUND

Jan Holm, MD
University of Göteborg
Göteborg, Sweden
R. Volkmann, MD

PURPOSE

The accuracy of examining lower extremity varicosis has only been clinically questioned. Therefore, we initiated a prospective study to compare the outcome of the clinical investigation with 2-D Color Doppler ultrasound, which is a more objective method of examining venous anatomy and function.

METHODS

Ten experienced surgeons agreed to participate in this prospective study of patients with varicose veins, free of leg ulcers. The use of a hand-held Doppler was optional. At the patients' first visit a study protocol was filled out with the clinical diagnosis and sent to the coordinator of the study. After that, the patient was referred to a vascular ultrasound unit. The result of the Duplex study was documented on another protocol and sent to the coordinator for comparison with the first protocol.

PATIENT MATERIAL

In 214 legs of 183 patients complete first and second protocols were obtained for comparison and statistical analysis.

RESULTS

In more than 20%, the function of the greater as well as lesser saphenous veins was misdiagnosed by the clinical examination. A slight improvement was observed when the lesser saphenous vein was evaluated with a hand-held Doppler, which however, was not true for the hand-held Doppler investigation of the greater saphenous vein. Thigh perforator (Hunter) insufficiency was overestimated. In more than 50% of the patients, substantial errors in the clinical evaluation was found as compared to the color Doppler. The clinical detection of insufficient perforating veins was unreliable. According to color doppler, no predilection site for insufficient lower leg perforating veins could be defined.

CONCLUSION

Preoperative clinical evaluation of varicose veins is unreliable as compared with diagnostic Duplex ultra-sound. Surgical therapies,

which are planned on the clinical diagnosis only, may lead to mistreatment of a substantial number of patients.

DISCUSSION

DR. PADBERG: It appears that you've succinctly summarized many of the issues that led to the development of the CEAP classification. In Sweden you are talking about clinical examination and you are talking about duplex examination and you're still trying to figure out what we're talking about in terms of identifying the disease and the pathophysiology in our group of patients that we can generalize to a specific individual and offer a treatment plan that would then lead us to a conclusion. My question from that leads to our gold standard for diagnosis. Thus one of the things that we might like to know a little bit more about your study is, was there a standardization for the clinical or the duplex examination? And if so, how did you do that amongst these disparate and geographically separate sites?

DR. HOLM: No. There was no standardization. This study reflects reality around the country. That's how our surgeons judge their patients. That's how the laboratories determine if this is an insufficient vein or not and that varies in different laboratories. So about half of the surgeons used hand-held Doppler and about half of the laboratories used a time definition of what is an insufficiency or not. In reality the problem of defining an insufficiency as reflux of half a second or one second or two seconds was a very rare problem. I think it was clear in most cases if it was a competent vein or a vein with clear insufficiency.

DR. DEPALMA: I really enjoyed this study because it's precisely what we found in a paper published four or five years ago, and someone accused us of not being able to use a hand-held Doppler. However, the question I would like to ask is did you have a look at how obese the patients were? It seems that the results with the hand held and the physical examination are worse when the tissue overlying the venous structures two and a half centimeters. Did you have any idea of that?

DR. HOLM: I'm sorry. It was not part of the protocol, and it would be very difficult to reconstruct. I don't know.

DR. DEPALMA: I'd be interested in the panel's opinions about the penetration of the conventional hand-held Doppler perhaps as a limiting factor here.

DR. STRANDNESS: It's not a limiting factor, Ralph. It's dependent on the transmitting frequency.

DR. O'DONNELL: Just a comment, first of all, about your gold standard. Unfortunately, I think using duplex ultrasound as your gold standard to judge where perforating veins are is fool's gold. You really need to operatively identify it, No. 1, particularly in the light of Puric's study which showed a very poor correlation between duplex assessment of where perforators were and whether they're incompetent and evaluation at surgery. The second thing is about 25 years ago we showed similar results as far as identifying the perforator veins with continuous wave Doppler, but in assessing whether there was greater saphenous incompetence, the CW Doppler seemed to be little bit better.

THE VASCULAR LAB-DUPLEX IN REFLUX

D.E. Strandness, Jr., MD, DMed(Hon)
University of Washington School of Medicine
Seattle, Washington USA

It appears to be well established that the changes in the deep venous system that can follow an episode of acute deep vein thrombosis (DVT) vary both in terms of location and extent. The primary changes that occur are the development of chronic occlusion and the appearance of valvular reflux.[1,2] The factors that have a great effect on outcome are based on the extent of the abnormality and its effects on the hemodynamics of venous flow. While there is still some uncertainty and disagreement on the etiology of the post-thrombotic changes that occur in the lower leg, most investigators cannot escape the key role of altered pressure-flow relationships that develop particularly below the knee.[3]

With regard to the issue of obstruction, this can be documented both by venography and more recently by duplex scanning. This would not appear to be a problem given our advances in technology. The issue with regard to valvular function is less clear and open to more discussion both with regard to the distribution of the valves and their potential for causing problems when they become incompetent. The valves themselves have a distribution which obviously must play a role in their importance from a clinical standpoint. This factor must be considered as follows:[4]

(1) there are no valves in the IVC;
(2) in the common iliac vein approximately 1-7% will have a valve(s);
(3) in the external iliac 24% will have a valve(s);
(4) 67% of the common femoral veins will have one or more valves;
(5) the superficial femoral vein will have one or more valves in 90% of individuals;
(6) there is usually one or two valves in the popliteal area;
(7) there are hundreds of valves in the deep veins below the knee;
(8) there is commonly a valve at the point of entrance of the greater and lesser saphenous veins into the deep system. Valves are a constant finding in the major superficial veins but their numbers are variable.

It should be obvious that detection of valvular reflux can be of a global or segmental nature.[5] Global reflux has been studied by plethysmograpic methods by many investigators. This information will be presented by other speakers in this meeting.

Our interest extends back to when continuous wave Doppler was first used and demonstrated the capability of documenting the direction of venous flow as influenced by a variety of maneuvers. While this method could be used for segmental studies, it was hampered by the lack of an imaging component. To overcome these problems, we first began examining this problem in 1988.[6,7]

Our approach was based on the observation that reflux should be studied with the patient in the upright position where the effect of gravity can be taken into account. The procedure involved the use of segmental cuffs placed at several levels of the limb. The cuffs were as follows:

(1) upper thigh-24 cm;
(2) 12 cm for the calf;
(3) 7 cm for the foot.

With the patient standing and the transducer of the duplex scanner placed just proximal (toward the heart) of the upper end of the cuff, the cuff would be rapidly inflated for a period of 3 seconds after which the cuff was deflated very rapidly (within 0.3 second). The inflation/deflation sequences are repeated for each level of the limb with the time of valve closure vs. reflux are documented on a strip chart recording. In our study of normal subjects (N=32), 95% of the valves achieved closure in <0.5 seconds.

Since many labs might not be able to use the cuff method, we studied the effects of using the Valsalva maneuver and limb compression with the patient in a -10 degrees of Trendelenburg. When this form of study was done the time to valve closure in normal subjects was 1.77±0.96 sec compared to 0.69±0.83 sec (means and SD). In clinical practice we suggest that a valve closure time of <0.5 sec be used for the upright cuff method and <2.0 sec for the -10 degree position.[8]

A major advantage of this method is that it can be used to document segmental reflux in the position which leads to the major pressure and flow relationships on the venous system.[9,10] A disadvantage is that we have not yet been able to document the extent to which the duration of reflux influences the outcome after an episode of DVT.

References

1. Johnson BF, Manzo RA, Bergelin RO, Strandness DE, Jr. Relationship between changes in the deep venous system and the development of the post-thrombotic syndrome after an acute episode of lower limb deep vein thrombosis: A one-to six-year follow-up, *J Vasc Surg.* 1995;21: 307-313.
2. Johnson BF, Strandness DE, Jr. Ultrasound and venous valvular reflux, *J Vasc Inv 3.* 1997;108-113.
3. Cockett FB. The ankle blow-out syndrome: A new approach to the varicose ulcer problem. Jones DFE, editor. *Lancet 1,* 17-23. 1953.
4. Cockett FB. *The Pathology and Surgery of the Veins of the Lower Limb.* Dodd H, editor. 1976. Edinburgh Scotland, Churchill Livingstone.
5. Van Bemmelen PS, Bedford G, Beach K, Strandness DE, Jr. Status of valves in the superficial and deep venous system in chronic venous disease, *Surgery.* 1991;109:730-734.
6. Van Bemmelen PS, Beach KW, Bedford G, Strandness DE, Jr. The mechanism of venous valve closure: Its relationship to the velocity of reverse flow, *Arch Surg.* 1990;125: 617-619.
7. Van Bemmelen PS, Bedford G, Strandness DE, Jr. Quantitative segmental evaluation of venous valvular reflux with ultrasonic duplex scanning, *J Vasc Surg.* 1989; 10:425-431.
8. Markel A, Meissner MH, Manzo RA, Bergelin RO, Strandness DE, Jr. A comparison of the cuff deflation method with Valsalva's maneuver and limb compression in detecting venous valvular reflux, *Arch Surg.* 1994;129(7):701-705.
9. Meissner MH, Manzo RA, Bergelin RO, Markel A, Strandness DE, Jr. Deep venous insufficiency: The relationship between lysis and subsequent reflux, *J Vasc Surg.* 1993;18:596-608.
10. Meissner MH, Caps MT, Bergelin RO, Manzo RA, Strandness DE, Jr. Propagation, rethrombosis and new thrombus formation after acute deep venous thrombosis, *J Vasc Surg.* 1995;22(5):558-567.

DISCUSSION

DR. SUMNER: Gene, how important are the below knee valves to the exam and do you look at the peroneal, posterior tibial, anterior tibial, and the whole gamut on each study or what?

DR. STRANDNESS: Well, let's go back to the patient with varicose veins. I want to know two things. Number one, is the deep system competent or incompetent and that would also involve looking at the veins below the knee. The second thing I want to know is exactly what elements of the superficial system are incompetent. In our research studies we look at all these views. We look at the posterior tibial, the peroneal. We don't look at the anterior tibial. I think Tony Comerota made a point about that. Why this vein doesn't get involved, we don't know. We look at the greater saphenous and also the lesser saphenous. So we can map out at each visit exactly which segments are incompetent and which are not.

DR. RAJU: Dr. Strandness, is there any way to quantify all of this?

DR. STRANDNESS: No. One of the disadvantages, of course, is we can't relate necessarily the reflux time, to the long-term outcome. We can't do that yet. I don't know of any way at the present time to document that. Perhaps you know a better way to do this, but from the standpoint of ultrasound, all you can say is the valves in the segment which you're looking at have a valve closure time which is abnormal. That's all you can say.

DR. RAJU: Can you calculate the volume from the diameter?

DR. STRANDNESS: I think whenever you start trying to calculate volume flow in the arterial or the venous system using ultrasound or actually any method, it becomes very difficult. I would caution trying this since any changes in the diameter of that vein invalidate the measurement. There are also considerations with regard to ultrasound per se that also make it difficult.

DR. GOREN: I have a very simple question concerning both duplex and Doppler examination: Can the presence of a competent valve in the common femoral vein cover up - during VALSALVA maneuver - an incompetence of the saphenous femoral junction?

DR. STRANDNESS: That's a good question, Dr. Goren. That's something I've thought about too. When I put these slides together and was looking at the anatomic distribution of the valves, I asked myself the same question, would a competent valve in the common femoral vein, invalidate what you want to look at in the thigh, in practice this does not appear to be the case, but I think it's a consideration that we have to take into account.

DR. RAJU: Ken Myers published a paper saying just the opposite. Ken, do you have anything to say about that? Your publication in the Journal of Vascular Surgery basically said the deep venous reflux of the common femoral and popliteal veins were almost always associated with short and long saphenous reflux.

DR. MYERS: Yes. I don't see how you can get reflux down into the long saphenous vein unless there is reflux through the common femoral into that vein. So we defined common femoral reflux as reflux to beyond the valve below the saphenofemoral junction. Three years ago I asked the question here and I ask it again. I don't understand how short saphenous reflux occurs given that virtually all of our patients have competent valves in the superficial femoral vein. Where does the blood come from?

DR. COLERIDGE SMITH: Well, the answer is quite simple, Ken. It comes through orthograde flow, up the popliteal vein, below the saphenopopliteal junction.

DR. MYERS: No, that's not right because I've got short saphenous reflux, and if I elevate my leg to empty it of blood and then hang it down, it immediately fills, but my deep valves are normal. So where does the blood come from?

DR. VOLKMANN: There might be small muscular and perforator veins one wouldn't see with the Doppler which may be the source of distal leakage you are addressing.

DR. MYERS: Within two seconds? It seems too quick for me.

DR. VOLKMANN: I have another question to Dr. Strandness. Do you agree that there might be a possibility to state falsely competent valves in cases of widened axial collaterals or doubled pathways where the blood is going through these pathways and not through the vein you are focusing the Doppler on.

DR. STRANDNESS: I'm sure that could happen, but I have not thought about it. We see reduplications very frequently, and I suppose that one of those could be competent or incompetent.

DR. NEGLEN: If you have a reflux duration on duplex of three seconds and you improve it to two seconds or you have a valve leakage which goes from three seconds to one second, have you done a better job with the one that goes from three to one than the one that goes from three to two?

DR. STRANDNESS: Peter, if I knew the answer to that question, we would be able to answer a lot of questions. If you shorten the reflux time, it seems intuitively that you might well have a better vein.

OBSERVATIONS ON AIR PLETHYSMOGRAPHY

Paul R. Cordts, LTC, MC
Tripler Army Medical Center
Honolulu, Hawaii, USA

The air plethysmograph, or APG, (ACI Medical, Inc., Sun Valley, CA) is a powerful research tool which has contributed substantially to our better understanding of lower extremity venous disease. The APG quantifies several hemodynamic factors associated with varicose veins and skin changes of the leg such as: obstruction (OF), venous filling index (VFI; a measurement of reflux), ejection fraction (EF; a measure of calf muscle pump efficiency), and residual volume fraction (RVF; an estimate of ambulatory venous pressure). With this ability to quantify various hemodynamic parameters, however, arose further questions regarding the interpretation of APG test results. Several such questions included: 1) Are APG test results reproducible?; 2) Is APG a good test for venous obstruction?; 3) Can APG distinguish between sites of reflux?; and 4) Is APG important for daily practice?

Are APG test results reproducible?

Katz, et al[1] studied 50 legs in 25 healthy volunteers and found good test-retest reliability for venous volume (VV), VFI, EF, and RVF. The correlation coefficient for RVF was lowest (0.63), perhaps influenced by the vigor with which a patient performs the 10 tiptoe exercises. The volunteers also showed a statistically significant decrease in VFT90 (time to achieve 90% of venous volume) and an increase in VFI from 1.9 to 2.3 ml/sec (p=0.039), when comparing morning to late afternoon measurements. The authors detected no daily variation in EF or RVF. Seven of 50 extremities (14%) in 5 volunteers (20%) had a normal VFI in the morning which became abnormal in the afternoon, although the differences were very small in 5 of 7 limbs and could be explained by increases in resting arterial inflow. This study points out that valvular incompetence may develop as a consequence of daily activity. Yang, et al[2] examined the variation and reliability of APG parameters in 17 patients (18 limbs). They found that the coefficients of variation for repeated measurements ranged from 7.5 to 27% for most APG parameters. VFI and EF showed moderate degrees of variation when measured on different days (coefficient of variation/method error of 13.4% and 10.7%, respectively). In addition, the difference between the mean of 3 tests and mean of 10 tests for most APG parameters varied from -8.6% to 5.0%. These variations were deemed acceptable in daily practice and argued that performing more than 3 tests was unnecessary. They concluded that APG is very unlikely to detect small changes in VFI and EF, an important fact to consider when assessing treatments designed to improve calf pump function or reduce reflux.

Is APG a good test for venous obstruction?

The relationship between OF by APG and arm/foot venous pressure differential is illustrated in Figure 46, page 61 in Reference 3. The figure compares OF in 15 limbs with deep venous reflux but no obstruction (arm/foot pressure differential < 5 mmHg) to 8 limbs with venographic deep venous obstruction (arm/foot pressure differential > 5 mmHg). The median value and 90% range for each group are clearly discriminated, lending support for OF by APG as an accurate and non-invasive method of determining the severity of outflow obstruction. Belcaro, et al[4] provide a superb summary of data relevant to variability of APG parameters and obstruction.

Can APG distinguish between sites of reflux?

APG primarily measures thigh to calf reflux. APG may not detect isolated thigh or isolated calf vein reflux. It may be useful in determining the relative contribution of deep versus superficial vein reflux in those patients who have combined deep and superficial venous incompetence. One must also consider the effect of increased arterial inflow due to hyperemic skin or exercise (eg. 10 tiptoe movements needed to determine RVF) when interpreting the VFI.

Is APG important for daily practice?

For most patients with primary varicose veins and/or spider veins, the parameters measured by APG have little or no impact on their surgical or medical management. The separation and quantification of each parameter is most important in more complex patients with combined obstruction and reflux which may involve superficial, deep and perforating veins. Nicolaides, et al[5] discuss in detail how APG impacts on patient management in an excellent summary monograph. Further, Bays, et al[6] compare APG to PPG for measurement of clinically significant venous reflux and note the high sensitivity of PPG refill times to identify reflux (100%), but low specificity (60%). They conclude that the combination of APG and duplex scan currently provide the best means to assess venous reflux. Some vascular labs now use APG as a screening tool to identify the presence of obstruction or reflux and allow a more focused and comprehensive venous duplex examination.

The above questions are but a few of those which arise during interpretation of the APG test. We hope this topic will stimulate further discussion on the role of APG (and other methods) in the study of chronic venous disease.

References

1. Katz ML, Comerota AJ, Kerr RP, Caputo GC. Variability of venous hemodynamics with daily activity, *J Vasc Surg.* 1994;19:361-365.
2. Yang D, Vandongen YK, Stacey MC. Variability and reliability of air plethysmographic measurements for the evaluation of chronic venous disease, J Vasc Surg. 1997;26:638-642.
3. Nicolaides AN, Sumner DS. Investigation of Patients *With Deep Venous Thrombosis and Chronic Venous Insufficiency.* Sunland, CA: Med-Orion Publishing Co; 1991.
4. Belcaro G, Christopoulos D, Nicolaides AN. Lower extremity venous hemodynamics, *Vascular Surgery.* 1997;Mar/Apr:20-25.

5. Nicolaides AN, Christopoulos D, Goren G. How air plethysmography (APG*) influences patient management. Publication by ACI Medical, Inc., Sun Valley, CA.
6. Bays RA, Healy DA, Atnip RG, Neumyer M, Thiele BL. Validation of air plethysmography, photo-plethysmography, and duplex ultrasonography in the evaluation of severe venous stasis, *J Vasc Surg.* 1994;20:721-727.

DISCUSSION

DR. PADBERG: That was a very nice review, Paul. I would like to bring one point into focus, and that is the variability that we're talking about in VFI which has raised a lot of concern amongst the faculty and other members that are dealing with venous disease. It's really the same level of tests/retests reproducibility which we have all accepted many years ago as part of the ankle/brachial index. You recall, I'm sure, the discussions in the journal several years ago about whether it should be 10, 15, 20 percent, and by and large most of us accepted a 10 to 15 percent variance. So this is clearly within that ballpark. As regards the time of day issue, we've been wrestling with that too as part of a research study that we're doing that it does involve APG measurements. And recognizing that it's only 10 percent, I wonder if we ought to just take Tony's number of two and make it 2.5, in which case even your afternoon study is within the normal limit. It doesn't matter when you do the test if you're willing to accept that. One other final comment. You mentioned APG and its variability in terms of looking at the time and usefulness in practice. Although we haven't used it for that, we have noted, as has Andrew Bradbury in the Edinburgh group that an abnormality in the VFI, meaning it's gone from normal to abnormal. They used foot volume plethysmography, a similar test of reflux and its volume, which presaged the identification by duplex exam of surgically correctable venous insufficiency, in their case a missed popliteal and -- lesser saphenous and saphenofemoral recurrence.

DR. CORDTS: Although we're five miles away from Straub, we do very little deep venous reconstruction, and I would say that we infrequently use the test. I use the test on occasion to confirm the findings of the duplex scan prior to surgery in patients with primary varicose veins, but for the most part, it's confined to patients in whom I'm contemplating deep venous reconstruction. So I think what it's helped me do is more in understanding the pathophysiology of the disease than helping in the management of a patient on a day-to-day basis.

DR. RAJU: We also found that VFI-90 is useful. VV sometimes is useful. The RVF and other parameters are generally not useful.

DR. THORPE: Dr. Rutherford and others encouraged me to do hemodynamic testing on a lot of patients we've treated, and what I've found in the before and after APG, and I wondered if you've seen this, although you say you don't do a lot of deep venous reconstruction, is that if the outflow fraction is decreased, then that leads you to think that there is obstruction. But in many of our patients we see total obstruction of the iliac system and there is such good collateral flow that the outflow fraction is absolutely normal. And, in fact, you don't even see any reflux until you open that up and get enough flow. So you get a normal reflux index and a normal outflow fraction when they have significant obstruction and significant reflux. How often do you think that's happening?

DR. CORDTS: I don't know, but I worry about it. The outflow fraction portion of the APG: my understanding of it is woeful at this point. I don't understand how a single bolus of blood from the mid-thigh (the OF test by APG) can adequately test, for example, a common iliac vein obstruction. Perhaps the arm/foot venous pressure differential is better, but I'm sure that the outflow fraction by APG is not adequate.

DR. STRANDNESS: I just have one question. Can you distinguish the level of reflux in terms of segments and its effect on VFI? In other words, common femoral, superficial femoral, below the knee popliteal. Have you tried to break it down and segment the VFI.

DR. CORDTS: I'm not sure we have, Dr. Strandness. If you have a competent popliteal valve, you may have a normal venous filling index. So you may find incompetence by duplex scan, but you have a normal venous filling index.

EVALUATION OF OBSTRUCTION

Peter Neglen, MD, PhD
River Oaks Hospital
Jackson, Mississippi, USA

Ascending and antegrade transfemoral phlebography is the time-honored way to describe venous obstruction. Injection of contrast dye into the venous system may delineate the distribution and nature of the morphologic changes, including occlusion, stenosis and presence of collateral circulation, but does not provide any information whether there is a significant functional hemodynamic obstruction to the venous outflow or not. The development of collaterals can either be seen as an indicator of obstruction with an attempt to compensate a significant obstruction, or a compensatory mechanism neutralizing the outflow obstruction by bypassing it. The mechanism and inducement of collateral formation are unclear.

The degree of hemodynamic obstruction depends on multiple factors, e.g., the number, location, degree of narrowing, and length of the lesions, development of collaterals, and the volume flow varying at rest and during exercise. To achieve proper sensitivity of any laboratory test, outflow must be augmented to a reproducible and physiologic level to be able to detect a significant obstruction and assess result after reconstruction.

Obstruction in the post-thrombotic lower extremity is especially difficult to evaluate. It would be easy to accept the lesion as causative in a patient with a unilateral lower limb swelling and pain, and radiologic finding of an isolated single obstruction in the iliac vein. Such a lesion could be caused by tumor, enlarged lymph nodes, retroperitoneal fibrosis, trauma, vein compression by the transversing artery etc. Additional information is necessary to direct treatment in a lower extremity with post-thrombotic disease with a combination of multi-level reflux and obstruction involving the whole limb and the iliac segment.

There is to date no dependable non-invasive method to assess outflow obstruction in chronic venous insufficiency. Calf vein outflow fraction determination using plethysmographic methods is reliable in acute axial vein thrombosis, but it may be falsely negative in the later chronic course of the disease. Alternative non-invasive methods are under evaluation. Instead of using the simple outflow fraction, the outflow curve can be analyzed by plotting the volume

semi-log scale versus time. A time constant can define the nature of the exponential curve. The curves can then be analyzed as single or multiple capacitance and resistance systems. Preliminary results are encouraging.

The invasive test combination of the arm-foot vein pressure differential and the foot vein pressure elevation after reactive hyperemia seems to be the most reliable investigation currently available for detection and grading of global obstruction. However, the hyperemia flow induced by the tourniquet ischemia may not be reproducible in repeat tests or the flow high enough to detect a significant stenosis in all conditions. An additional disadvantage is the inability to define the location of the most significant obstruction in multi-level disease. No correlation has been found between this method and the number and sites of obstruction or development of collaterals.

Invasive pull-through pressure gradient over a lesion or pressure increase peripherally to the lesion with augmentation of venous inflow may be indicative of a significant stenosis. For this purpose transducer-tip catheters can be used with high accuracy. Augmentation of flow can be induced by twenty forceful calf muscle contractions by an awake patient, by injection of papaverine (30-60mg) into the ipsilateral femoral artery and by ischemia induced by a tourniquet (300mmHg pressure for 3 min). It appears that a prestenotic pressure rise of >2-4 mmHg on provocation and a slow return to base level (>30s) indicate a hemodynamically significant obstruction. The critical value for venous pressure gradient in borderline obstruction needs to be further elucidated. The main difficulty is the lack of a "gold standard". The result may have to be related to clinical outcome after treatment. Certainly a much smaller gradient than encountered in arterial disease will be significant.

Intravenous ultrasound (IVUS) has been shown to be superior to phlebography in detecting the morphology of the obstruction. This device accurately outlines the configuration (circular structure or slit like), length of obstruction, and vein wall density. It is probable that the flow through a compressed vein is inhibited as compared to a circular vessel, even if the transverse surface area is the same. Software built into the IVUS apparatus allows accurate calculations of cross-areas and diameters.

The interest in obstruction is on the increase as percutaneous endovascular procedures are refined to facilitate the treatment of venous obstruction. Therefore, it is important to find reliable tests to identify critical lesions and for post-operative objective assessment. Although obstruction is considered less important than reflux in the pathophysiology post-thrombotic disease, as many as 20-30% of patients have significant contribution by out-flow obstruction. When tests become more refined, this figure may be shown to underestimate the importance of venous obstruction.

DISCUSSION

DR. SUMNER: I didn't quite catch whether you measured the popliteal venous pressure at the same time you measured the pressure at the ankle?

DR. NEGLEN: Yes. We're inserting two Millar™ probes, transducer tipped catheters, and place them at the same level in the popliteal, and long saphenous veins, and simultaneously you measure the dorsal foot vein pressure with the transducer at catheter tip level.

DR. SUMNER: What's interesting is that Ludbrook did this same sort of study many years ago (1963). He found that there was only a modest decrease in popliteal venous pressure after exercise - the decrease being roughly the same in normal limbs and in limbs with varying degrees of venous reflux. While venous pressure at the ankle decreased markedly after exercise in the normal limbs, ambulatory venous pressure in limbs with incompetent valves was abnormally high. So it seems that, in contrast to the venous pressure at the ankle, popliteal venous pressure is relatively unaffected by the presence or absence of venous reflux.

DR. NEGLEN: No, this is true. This is our observation too, that in many patients with normal venous hemodynamics in all tested aspects, that pressure fluctuations are limited. However, usually we find a slight 20 to 30 percent decrease in popliteal vein although it might be 50 or 60 percent in the dorsal vein. But in 10 to 15 patients we have actually seen an increase of the pressure in the popliteal vein which has not been described before. This must be due to some sort of outflow obstruction at the knee level or above, which does not reveal itself in other hemodynamic tests, e.g. the dorsal vein pressure. I agree with you, that there is very little fluctuation in normal patients with exercise in the popliteal vein.

DR. STRANDNESS: If you have an outflow obstruction and you exercise the pressure in the vein below the occlusion has to go up. John Hobbs, for example, many years ago showed that if you look at people with venous claudication, a key factor is the great increase in venous pressure that you get with exercise.

DR. NEGLEN: I agree. The point is that these patients have normal outflow fraction, normal dorsal foot vein pressure, no reflux, and will not be found to have any venous problem unless you do the popliteal vein pressure measurement.

DR. PADBERG: I'd like to congratulate the both of you for tackling one of the issues that I think really leaves all of us many questions, and that is how do we define obstruction? It's something we do very poorly. Although it's a part of all of our scales, there's very little of it that we really don't have a precise definition for obstruction. As you pointed out, it really takes a lot of obstruction to get to the point where the collateral capacity is overwhelmed. My question has to do with IVUS. I presume that you do this as an intraoperative event since most of the valves are competent -- unless you're studying only incompetent veins, you would have to pass it from below up; is that correct? Tell us a little bit about that.

DR. NEGLEN: We are performing the IVUS investigation during surgery, and we have only used IVUS in obstruction detection in the iliac segment from the common femoral proximally. It is used in situations with presence of pelvic collaterals, but no obvious obstruction detected on the venogram. In that situation it can be performed in the radiology suite or in the OR. We have used IVUS in the OR since we have an interventional suite. It is helpful evaluating obstruction in post-thrombotic disease but more so in other types presence of collaterals, due to non-thrombotic obstruction e.g. iliac vein compression syndrome. We have found significant difference between degree of obstruction seen on the venogram compared with the IVUS. Very short obstructions have been drowned in x-ray contrast, but revealed with IVUS.

DR. PERRIN: I have two questions. The first one is can you give us more details on how you measure the pressure at the popliteal level and at the femoral level? And second, sometimes femoral

obstruction is very difficult to assess. Have you tried to compare the pressure gradient between femoral and popliteal veins?

DR. NEGLEN: After the insertion the level of transducer tips are directed by fluoroscopy. So we know the exact anatomical level. Then we stand the patient up and she/he does 10 toe stands similar to the ambulatory venous pressure. So that's the exercise inducing the hyperemia. The second question was?

DR. PERRIN: Sometimes femoral obstruction is very difficult to assess. Have you tried to identify it by measuring the difference between femoral pressure and popliteal pressure?

DR. NEGLEN: No, we haven't done that. That is what is in the pipeline, and we would like to do it in awake patients that are erect. So that's why you need to push the catheter, if you can, all the way up to the femoral vein and then do a pull-through pressure measurement with that catheter. We haven't done that.

DR. VOLKMANN: We in Sweden have a long tradition of using plethysmography for detecting outflow obstruction in the lower leg, and I would like to comment on your statement about the usefulness of this method in patients with venous outflow obstruction. In the acute state of venous obstruction when there haven't been developed any collaterals, you will find a delay of the venous outflow using one of the available plethysmographic methods. In the chronic state, of course, I agree that one might find totally negative findings, i.e. normal outflow rates through collaterals, and that this might occur in cases of thrombosis of the proximal abdominal veins.

DR. NEGLEN: Yes, I agree with you. I failed to tell you that this is a study in chronic venous obstruction. We know this from IPG and other plethysmographic studies done in the United States through the years when before we got the duplex Doppler to diagnose DVT with an acute obstruction. Of course it is of no value today to be used in diagnosis of acute DVT since we're using duplex. It has been shown that when the condition also shows exactly what the fact is, that when it turns chronic, the IPG is of no use and neither is the APG.

DR. VOLKMANN: I have another comment on the different time constants within the venous outflow curve such as addressed in your speech. As more centrally the obstruction is situated, as faster outflow rates will be observed initially, due to the filling up of patent vein segments in the nearby of the gauge. Then, in the later stage, you might observe a slowing down of the venous outflow rates, since the patent vein compartment is filled up, and venous outflow now is limited by the obstruction itself.

DR. NEGLEN: Oh, I totally agree with that. That is our hypothesis. You can have these resistances and capacitances either in line with each other, being the proximal and distal, or maybe beside each other too. You have exactly described our hypothesis.

DR. ABU-BAKER: So I would like to thank you for your very excellent presentation. My question is how can you use intravascular ultrasound in segmentary superficial thrombophlebitis.

DR. NEGLEN: Well, you seem to have an interest in superficial phlebitis. I don't think that we should use the intravascular ultrasound at all with superficial thrombophlebitis. I think we should, use duplex scanning for diagnosis, if necessary. IVUS doesn't have any role in superficial thrombophlebitis.

DR. TRIPATHI: I have an idea. I want to propose a new way to measure pressure differential other than the arm-foot vein differential -- this question is to Dr. Raju. I wanted to ask you if it would be better, if one femoro-popliteal venous system is involved with deep vein obstruction and the other leg is not, then if you put a transducer or a cannula into the opposite side femoral vein and then do a proximal foot to distal femoral venous differential because you're measuring pressure & flow in contralateral unaffected femoral vein which is good control to the vein which is affected, that would give you a more accurate idea of the differential than the arm to foot.

DR. RAJU: We haven't tried that really.

DR. TRIPATHI: That's why I said it's an idea.

INVASIVE PROCEDURES: DESCENDING VENOGRAM

Seshadri Raju, MD
University of Mississippi Medical Center
Jackson, Mississippi, USA

It has been known for some time that there is very poor correlation between descending venography and global physiological measures of reflux such as ambulatory venous pressure measurement and Valsalva foot venous pressure measurement.[1] In an analysis of 56 lower limbs presenting with chronic venous insufficiency, the positive predictive value and negative predictive value of Duplex examination in the erect position to diagnose class 4 or higher skin changes were 86% and 78% respectively.[2] The corresponding figures for descending venography using the Kistner classification was 44% and 63% respectively. As a result duplex examination in the erect position has superseded descending venography to identify clinically relevant refluxive venous valve segments. The technique of descending venography does remain indispensable to the operating surgeon to provide the anatomical detail necessary for surgical exploration. In this context, a hard copy record of valve station locations, anatomical position of the axial vein and tributaries as well refluxive collaterals are very helpful to the surgeon in the operating room. Descending venography is not always reliable in predicting the absence or presence of repairable valve leaflets at the valve stations; both false positive and false negatives occur.[3] Repairable valve leaflets during surgical exploration were actually found in 25% of cases (n=24) predicted to have no repairable leaflets based on preoperative descending venography. Presumably massive reflux of contrast through the valve station had obscured the presence of leaflets. Conversely, among 118 cases thought to have repairable valve cusps based on preoperative descending venography, none were found at surgery in 11%; trabecular strands and intimal thickening had mimicked the appearance of valve leaflets on descending venography and had been falsely interpreted to represent such. In view of this, an axilla is always prepared and kept ready for an axillary transfer procedure, even when a direct valvuloplasty appears feasible on preoperative descending venography.

Since the role of descending venography has changed from diagnostic to one of preoperative roadmap in recent years, earlier arguments regarding the best technique to perform the procedure have now become moot. For example it was argued that the supine technique of descending venography was more specific than the 70% erect technique. Considering the changed role of descending venography, the best technique at the present time is clearly one that

produces the best and most extensive reflux contrast opacification of the venous tree. A 60% head elevation with standardized Valsalva yielded 84% reflux opacification of the distal venous tree compared to only 42% opacification with the patient in the supine position performing a standardized Valsalva technique[4]. The former technique is therefore in current use in our institution.

References

1. Raju S, Fredericks R. Evaluation of methods for detecting venous reflux, *Arch Surg.* 1990;125:1463-67.
2. Neglen PN, Raju S. A comparison between descending phlebography and duplex doppler investigation in the evaluation of reflux in chronic venous insufficiency: A challenge to phlebography as the "gold standard", *J Vasc Surg.* 1992;16:687-93.
3. Raju S, Fredericks RK, Hudson A, Fountain T, Neglen P, Devidas M. Venous valve station changes in 'Primary' and Post-thrombotic Reflux: An analysis of 149 cases, *Ann of Vasc Surg.* In Press.
4. Morano JU, Raju S. Chronic venous insufficiency: Assessment with descending venography, *Radiology.* 1990;174:441-44.

DISCUSSION

UNIDENTIFIED SPEAKER: Just looking at your presentation, it reminds me that we've been trying to assess obstruction also in another area which is the ovarian veins, and we always used an angiography which gives us a very precise delineation of where the flow goes and where collaterals go and that gives you a very good idea what to do surgically or nonsurgically. Have you used that video angiography in your cases in which you are going to do surgery any or do you use static images like you showed?

DR. RAJU: Until about two years ago we were using static images in our institution, but they have new equipment and they use cine and these are representative cut films. I think that's the way to go.

DR. KRYLOV: Can you tell us because your presentation is very persuasive, over 400 venograms carefully evaluated, what will be your personal decision if you were to have a patient to be operated on with a reconstruction of the valves which you will do? Would you operate on him without the venogram only on the basis of the duplex examination? I can tell you that my question is based on my personal negative experience because I was persuaded by the radiologist. He showed me that, the valve is present and when I opened the vein, I didn't find the valve. What will be your policy in that case?

DR. RAJU: Well, as I said, we always keep one axilla prepared. If you don't find a valve, you go on to an axillary vein transfer. We do an axillary vein transfer if we don't find a valve.

DR. KRYLOV: So your answer is positive? You will operate on the patient without performing a venogram?

DR. RAJU: We never operate on a patient without a venogram.

DR. KRYLOV: Always to make the venogram?

DR. RAJU: Yes.

DIAGNOSIS OF VENOUS ULCER – THE ST. THOMAS' WAY

Kevin G. Burnand, MBBS, FRCS, MS
St. Thomas' Hospital
London, United Kingdom

The diagnosis of a venous ulcer at St. Thomas' is initially based on clinical assessment. A history of venous thrombosis or varicose vein surgery is indicative of a venous ulcer, but the classic appearances of a medial or lateral sloping edged ulcer in the gaiter region of the leg surrounded by lipodermatosclerosis is strongly suggestive, providing there are normal pedal pulses and a normal doppler pressure index. We measure the hemoglobin, auto antibodies and blood sugar routinely and then apply compression therapy.

Definitive diagnosis is only made when healing has occurred. All patients then undergo duplex scanning of the deep, superficial and perforating veins and have a foot volumetry study performed. All patients also have bipedal ascending venograms to assess the presence of post thrombotic damage, which at present, influences our management and also affects the subsequent prognosis of the ulcer. We have shown that the duplex scan cannot detect all cases of post-thrombotic damage, and although we have abandoned descending venography, we still carry out standard bipedal ascending venography in all patients. An abnormal half refilling time on foot volumetry is used as the index investigation for diagnosing or undiagnosing venous ulceration. This cannot be measured accurately until the ulcer has healed. Atypical ulcers are excluded from trials and are usually biopsied ab initio.

DISCUSSION

DR. MYERS: The first thing, I would have to say Kevin, is that I'*m delighted that we agree on so many points. I'm also delighted that you have plenty of time in your consultations to go through all of these things that I also go through. Of course, I limited my talk by being required to limit my presentation to ten minutes only whereas I noticed that you spoke for several minutes beyond your allocated ten minutes so that you had much more to say, including many points that I would have liked to have made. Now I'll limit my response to a couple of points because we have so many people who want to ask some serious questions. If you wish to come and show us how to do a tourniquet test, that's fine. However, don't show me or my colleagues. Show my ultrasonographer. I'll back him every time. He'll show you reflux better than you can with your tourniquet. So I think you're wasting your time, even if you are better than me, which is quite probably true.*

DR. VOLKMANN: We are also using foot volumetry, and we believe also that it is a valid method for assessment of venous function. However, we have a problem with venous ulcers which are usually located at the place where the foot is exposed for the water level of the plethysmograph. So how are you doing?

DR. BURNAND: I'm sorry. You didn't get the message of the talk which was essentially we do a clinical diagnosis providing that we're happy that they've got a venous ulcer, and that diagnosis is always confirmed once the ulcer has healed. In other words, we do not do the foot volumetry at the time that they have an open ulcer. It's obtained once the ulcer has healed and I think that's important because I think if you've got a patient with a big open ulcer on the medial malleolus they cannot adequately exercise their calf pump. We've got some evidence to show this. We have done the test in patients with open ulcers and shown that they get a considerable improvement in their half refilling time once the ulcer has healed.

DR. STRANDNESS: Kevin, I wanted to ask you a question. If you had a patient who comes in with an ulcer in the gaiter area with pigmented skin, he has incompetence in the deep venous system, and a history of deep venous thrombosis in the past, are you going to do foot volumetry, ascending venography, descending venography, APG? I think this gets to be a bit ridiculous in terms of the workup. What are you doing all these tests for when you've got a simple

straightforward problem like the one I mentioned?

DR. BURNAND: Well, I'm doing the test because if I don't do the tests, I won't have enough information to give you on the CEAP classification in order that I can actually put the patients into a study, that you will accept. So all the patients that we're doing that on are part of clinical studies. If we weren't doing the studies, if you're asking me to what I'd limit the investigations to. I would do an anatomical test on all patients, an ascending venogram. I think Peter Neglen made the argument very cogently. I actually would go along with Raju too on this that I think there's not much doubt an anatomical test is helpful, and I would do a foot volumetry as my one other test. I'd be really interested to hear what your thoughts are about the nature of the ulcer if you discover saphenous reflux on duplex scan, Gene. I'm not talking about popliteal reflux this time. I'm talking about just long saphenous vein reflux. Does that prove the patient has got a venous ulcer?

DR. STRANDNESS: Well, of course not. The great majority of patients with greater saphenous incompetence never develop venous ulcers. That's why you scan the deep venous system in patients who present with a venous ulcer.

DR. BURNAND: So we can all agree that 80-90% of the ulcers are venous. The problem comes with the other 10-20% where there's a great deal of doubt. What are you going to take as your gold standard test for diagnosis in these cases.

DR. STRANDNESS: If you want to talk about anatomic verification of the site of disease, then I don't think venography is any better than duplex. And, in fact, the best studies that have been done in the United States looking at the problems associated with venography were done at the Massachusetts General Hospital by Dr. Athanasoulis. He noted that with an injection on the dorsum of the foot, you see the profunda femoris vein half the time and you see the iliac veins only 20 percent of the time. In the United States of America right now, at present, we can't do ascending venography on a routine basis to evaluate people with venous disease. This is not going to sell. It's too expensive, it's painful, and it causes complications.

DR. BURNAND: Well, can I just answer that very briefly? In terms of the profunda femoris vein I agree. It's sometimes extremely difficult to see that. In terms of the iliac veins, that's simply not our experience, and we can show you the venograms. We get good views of these vessels. It depends on how you do the venograms. In terms of the pain and the other problems, a lot of these have been eliminated by the use of nonionic contrast media. Most of the problems are that people have done really very poor quality venographic studies, some of which we've seen today. The picture that I showed you of the IVC and the iliac veins was done from a peripheral leg injection, not from proximal leg injection.

DR. STRANDNESS: Kevin, there's no doubt that some people -- I said that 20 percent of the time with an ascending venogram you can't see the iliac veins. I know in England that what you often do is you stick a needle in the common femoral vein to get the rest of the examination done. I'm just saying that in the United States, we cannot do venography on every patient who comes in with venous disease.

DR. BURNAND: But it seems in Jackson you can; is that right?

DR. RAJU: Those patients go to surgery. So it becomes justifiable, I think.

DR. PADBERG: What a wealth of things to discuss. Like you, we've had several problems identifying what the other components of ulceration may be. In my experience I find that the majority of patients who fall into that "I won't heal" category are very often nonvenous and nonarterial. We get to the answer and we fix that. Your laundry list I guess leaves us all a little bit overwhelmed. I'm sure some of those are English diseases alone, but sickle cell of course should be checked, as you have, for those of the appropriate genetic background but psoriasis is a real tough problem for me. How do I distinguish the psoriatic who has evidence of venous disease from someone who has a venous origin ulcer, whether we call it varicose or post-thrombotic? Along the same lines, the question of your testing to identify venous or nonvenous demands that you do a physiologic hemodynamic test. So I assume from your discussion with Gene, that a duplex is totally insufficient to do that.

DR. BURNAND: We've looked at duplex, and we've done it purely on the basis of duplex. That will under-read the abnormalities you get from a calf volume, refill test. Some of the time I think that the duplex scan demonstrates superficial reflux in limbs that have another cause for their ulceration. Then in other limbs you'll find a normal duplex, and yet the calf pump is inadequate. Whether this is because the patient has osteoarthritis of the knees, whether it's because they've got a fixed ankle, I don't know, but I don't think there is a one perfect test that says that the patient has a venous ulcer.

DR. PADBERG: Is that why you still have that chapter in your book on calf pump dysfunction as opposed to the others?

DR. BURNAND: Well, yes. Norman is very keen on that, and I think he's probably right. It isn't just an overall thing. I get upset when I hear people just talking about reflux and obstruction as the only problems because there's probably more to it than that. And actually, Peter Neglen said something good again today that we could agree on. That there's a sort of physiological obstruction from the peri-fibrotic changes around the vein. If you operate on a post-thrombotic valve, you find that you have to actually dig out of the surrounding fibrous tissue, and this must in some way be helping to cause the post-thrombotic physiological obstruction that Peter was talking about.

DR. MYERS: To try and be a little bit serious, could I make a comment about that list? I couldn't see the list from here but it looked to be pretty comprehensive to me. However, let's be real. I've never diagnosed any of those conditions at the first visit. I don't make a great effort to distinguish them early on and I'm interested that you required a biopsy to take and confirm that carcinoma - even I would have picked that one. I'm talking about most of the patients who come into my rooms, most of whom have either venous, arterial or mixed disease. Now, the way that I sort out the rest of those patients is not to spend half an hour with them totally befuddling them with a whole variety of peculiar questions about peculiar diseases at the first visit. These will emerge within the first few weeks of my treating them. If that ulcer conforms and does all the right things that I expect with my regime of treatment, then I will continue to treat that ulcer until it heals. If it shows any unusual features whatsoever either in the history or the examination as it unfolds, or failure to heal as I would expect, then I have a very low threshold for taking biopsies and even taking a history and examining the patient. We're not in disagreement. I think that your comments are a little bit excessive.

DR. BURNAND: Can I just tell you that I'll give you an offer to come to the ulcer clinic at St. Thomas on a Tuesday afternoon and I'm paying. Gene has actually been to the ulcer clinic, and he'll verify the fact that there are 70 people who turn up and there are a lot of people who we cannot actually diagnose. Nor could he. The great mistake is that when you don't diagnose the cause of the ulcer, they're put into the ragbag of being called venous until proven otherwise. Now, I think that's dangerous and I think it's wrong. And Frank I can see at least agrees with me. So you're either a "lumper" or you're a splitter. You're a "lumper". I'm a splitter. We'll agree to differ.

REcurrent Varices After Surgery (REVAS)

Michel Perrin, MD
University of Grenoble
Grenoble, France

REcurrent Varices After Surgery (REVAS) are a common, complex, and costly problem. Frequency of REVAS is stated between 20 to 80% depending on the duration of the follow-up assessment and the definition given to this status. The consensus meeting (Paris 1998, July) decided to adopt a clinical definition: presence of varicose veins in a lower limb previously operated on for varices, that includes: true recurrences, residual veins and varicose veins due to progress of the disease. There are no socio-economic data relating to REVAS at present. Its pathology has been poorly correlated with clinical examination and operative findings.

Clinical diagnosis including continuous wave Doppler examination (diagnosis level 1) remains essential but does not allow a precise assessment of REVAS. Consequently, the use of imaging investigations is mandatory. Duplex scan is considered as the method of choice (diagnosis level 2) but venography (diagnosis level 3) remains a valuable tool. Both clinical diagnosis and imaging investigations allow proposing a classification for every day usage and forthcoming studies. This new classification is using the CEAP that has to be expanded to define Topographic sites (T), Nature (N), and Sources (S) of recurrence, magnitude of reflux (R), and possible contributory factors (F): general or/and specific.

Methods for REVAS treatment include compression, drugs, and operational procedures: sclerotherapy and redo-surgery. Operational procedures share the same goals: to eliminate reflux from deep to superficial systems and to suppress varices. Sclerotherapy and ultrasound-guided sclerotherapy have been used with different protocols but according to the working group this technique is worth further evaluation. Surgery techniques can be divided in 2 groups: Procedures intending to suppress reflux from the deep to superficial venous systems (sapheno-femoral or sapheno-popliteal junctions, pelvic veins, thigh and leg perforators) and procedures for eradicating varicose veins.

There was no general consensus at this time for using sclerotherapy, surgery or both to treat REVAS. Nevertheless it has been stated that indications for treating REVAS are dependent on patient's complaint, clinical and instrumental findings. Very few data were available to estimate the REVAS treatment results.

Factors of recurrence and recommendations for primary prevention have been debated:

Factors of recurrence:
1. Recurrence due to residual veins in an incomplete primary planned treatment: tactical error, technical error, and incomplete treatment.
2. Recurrence due to evolution/progression of varicose disease: there are no scientific data concerning the mechanisms responsible but clinical observation suggest a list of factors: sex, heredity, hormonal status (especially pregnancy), occupation, sports, nutritional habits, and deep venous reflux.

Recommendations for primary prevention:
1. Preoperative duplex mapping is strongly recommended.
2. Surgical technique: flush ligation of sapheno-femoral and sapheno-popliteal junctions, trunk removal is also recommended.
3. Perioperative treatment: Low-molecular weight heparin routine prescription is not mandatory and should follow general rules for DVT prophylaxis. Long term compression might prevent REVAS but no current data exist.
4. Follow-up: Patient should be assessed clinically and by Duplex early in order to identify persistent reflux and presence of residual veins. Long-term follow-up should be carried out in all patients a minimum time of 5 years. Post-operative sclerotherapy is thought to enhance the quality of surgical treatment results.

In conclusion, guidelines for well-planned prospective studies are strongly recommended.

Specific recommendations for future studies:
1. Epidemiology & socioeconomics:
Prospective epidemiological studies with adequate duration of follow-up are required in which risk factors, investigations, treatment procedures and socioeconomic aspects are documented in detail from the outset.

2. Pathology:
Better understanding is required concerning the correlation between pre- and postoperative patterns of anatomy and physiology, the interventions, whether surgical or sclerotherapy and the pathological processes of recurrence,

3. Patient Assessment:
Further studies on the relationship between symptomatology and objective assessments would be valuable.

The indications for intervention in venous disease should be fully documented e.g., by the CEAP classification and disability scores. However since the symptoms customarily attributed to varicose veins are in the main non-specific, they should be supported, in studies of recurrent varicose veins, by objective assessments with duplex scanning and/or tests of venous function before and after intervention. In order to evaluate and compare outcome therapies it is essential that patient populations be fully defined both in terms of their clinical status and the patterns of valvular insufficiency in the superficial and deep systems before and after the intervention.

4. Therapy:
Many prospective studies and clinical trials are required. A few examples follow.

- Risk factors for varicose recurrence.
- The relationship between varicose recurrence, pre- and post-operative patterns of venous insufficiency and the nature of theinterventions.
- The value of routine preoperative duplex scanning prior to first time surgery for varicose veins.
- The value of routine post-operative scanning in the early detection and management of persisting reflux.
- The relationship between hemodynamic and clinical recurrence.
- The role of compression therapy in preventing recurrence.
- Measures to prevent neovascularization.
- Role of follow-up sclerotherapy after surgery in preventing recurrence.
- Ultrasound guided sclerotherapy versus conventional sclerotherapy in junctional recurrence and perforator incompetence.

Notes: The full manuscript has been submitted for publication to Cardiovascular Surgery. The consensus meeting has been supported by a grant from ServierResearch Group (France).

DISCUSSION

DR. VILLAVICENCIO: Michel, I enjoyed your review of the different causes of recurrence in varicose veins and we obviously have identified many of the ones you have mentioned. The reason for arising here is to warn our audience that aside from the prospective study, raudomized or not randomized you will embark on to detect the causes, we will be seeing more recurrences in the futnre because there is an epidemic of ambulatory phlebectonies in which the saphenofemoral junction is not properly dissected aud ligated. Also, the saphenopopliteal junction is just ligated with a vein hook. This has been done by some of our colleagues, I am very aware of that and it's been published too. So, I'm afraid that we will be seeiug this problem more and more. I think the presentation/publication or your work should be of an urgent nature to bring to the atteution of everybody doing surgery, which is the problem, and how to correct it. In our review of over 1,000 cases at the Military Central Hospital in Mexico City during the 20 years that I worked there, we identified, just like you did, the most important causes of recurrence to be the groin. This means an improper operation of the groin. That was number one. The other cause was missed perforators. We didn't classify exactly where they were, but we described them. The third cause was a combination of the two. Those are the two most important causes. Incomplete surgery at the junctions and also missing duplications. You may have a double saphenous vein and you missed one. So we must educate our people on anatouy and how to do a proper operation. I congratulate you on bringing this very important subject to us.

DR. PERRIN: I would say that happily in France the great majority of venous survey for varicose veins is performed by a vascular surgeon but, in fact, I would say phlebologists or angiologists who are not trained in surgery practice some treatment of the superficial venous vein, and probably we will find a lot of technical failure rate in REVAS. Neovascularization, it's very important. We have assessed our patients and it's common. We've identified now what are the factors that can lessen the nmnber of neovascularizations. They have no answer. You kuow, a lot of papers have been published to put a patch to close the fascia, but we have no real significant data for that.

DR. RUTHERFORD: Michel, you said that your randomized trial was about ready, and I wonder if you can give us some details about the trial. Basically what are yon going to be comparing, which two treatments? You have a lot of variables there that you obtained for us and I'm not sure how you're going to be able to stratify your gromps in a way that will make them comparable when you compare treatments. So could you give us a little more detail on that?

DR. PERRIN: Okay. I think the most important thing was classification. We will establish a forum based on the classification, and as you have seen, we have a lot of information on that probably that could help in order to -- because a lot of different situations to find out what is the best way to treat them, to investigate them, but we don't have the answer. It's just the starting of the study, but the forum, I think, will be in a few months because it's submitted for publication to a very good internatioual journal. I am awaiting their answer. That is my answer.

DR. EKLOF: It was a pleasure to be part of this consensus conference. As it happened, on the 12th of July the French won the World Cup in soccer. On the 13th they had the big parade with the French champions on Champs Elysee, and on the 14th it was the National Day. I don't think France had been on such a nationalistic top since the French revolution as it was duriug these three days and then the meetiug started. So all our French friends, they were really geared up, and Michel and Jean Jerome particularly had done a great job to prepare this conference through the French group. We had the CEAP and now we have the REVAS and we have the French C in CEAP. There is so much going on which is absolutely necessary to be able to progress in this field of venous surgery. Why I rose was basically to ask you about publication. Where do we stand right now? I think it's important that we get this out. Like CEAP, which is published now in 24 international journals all over the world. So at least the base is out and the same should be true for your REVAS.
DR. MARCUSON: I am a little concerned about the suggestion that with the increase in the frequency of ambulatory surgery that we might get worse results. Certainly the thrust of training and the performance of surgery on an ambulatory basis in the United Kingdom has been towards the most senior people doing it, and to have juniors learning on ambulatory cases is wrong. I don't think the profession should stand idly by. It's really a plea to make sure that when we do ambulatory surgery, which is obviously excellent for many cases of varicose veins, that we should still reach the highest standards.

DR. BURNAND: As far as the publication of your paper is concerned, that is, of course, sub judice and I couldn't possibly coument on that. What I was going to say to you is rather what Bob Rutherford had to say, which is it seems to me that you should concentrate on one area rather than throwing your net too wide. Why not just tell us about groin recurrences or popliteal fossa recurrences and concentrate ou one or both of those rather than try and put everything in? I would guess this would cover 75 percent of the major recurrences from the surgical point of view. The other brief comment was that in both those two areas the operations are not without their problems and have a risk of complications, particn

we've seen major problems with lymphoceles occurring and all sorts of mayhem from recurrent exploration of the popliteal fossa which often has to be done through a very unsightly scar.

DR. CORNU-THENARD: Michel, the CEAP classification is already not easy to use daily because there is a lot of items to answer. As you know, our European team with Hugo Partsch, Philip Coleridge Smith, you, and others has set up a computerized file. With it it's not necessary to know each chapter of this CEAP classification. Here with your REVAS there are more items. So it's more difficult to use it daily. Do you imagine setting up a computerized file for this REVAS or do you think it's not necessary?

DR. PERRIN: No. I think you can fill the form out in five minutes. If the patient is well prepared before surgery, you can fill out the form in five minutes, and if you want to start a study, you must have a lot of data in my opinion. Probably for daily use it's not convenient, but for prospective study I think we need it.

VENOUS OUTCOMES ASSESSMENT IN CHRONIC VENOUS DISEASE*

Robert B. Rutherford, MD, FACS, FRCS
University of Colorado
Silverthorne, Colorado, USA

Clinical papers from earlier times often characterized treatment groups with chronic venous insufficiency (CVI) simply in terms of the percent with "stasis dermatitis" or "stasis ulcers", the latter sometimes separated into healed or active groups. Pain and swelling were also mentioned, and even graded sometimes, in an attempt to show symptomatic relief from treatment. The individual components of stasis dermatitis (cutaneous pigmentation, inflammation/induration, subcutaneous fibrosis) were graded in various ways in the more detailed reports, but none of the above were ever standardized in a universally accepted way. Furthermore, the background of conservative therapy, e.g. the impact of differences in compliance with the recommended use of elastic stockings and leg elevation, particularly in the period following the procedure being evaluated, was rarely taken into consideration. After a variable period of follow-up after treatment, the percent of ulcers healed, or staying healed after treatment, or, if patients with stasis dermatitis were included, the percentage without a new ulcer were commonly reported as evidence of improvement. As the use of life table methods became popular among vascular surgeons, primarily as a way of reporting patency rates, it was occasionally applied to such reports, in characterizing the "ulcer free interval". Such was the state of the art before reporting standards were developed.

The first version of the SVS/ISCVS reporting standards in venous disease, published in 1988,[1] did much to improve this. In addition to proposing a risk factor grading system for assessing the risk of deep venous thrombosis (DVT), and making recommendations for reports on pulmonary embolism, it proposed a 3 level classification for CVI, suggested that the anatomy and etiology of the venous disease be described, and recommended using functional means of objective assessment before and after treatment, specifically ambulatory venous pressures (AVP) or one of the then current non-invasive tests (NIT's) for assessing obstruction or reflux. It also recommended a +3 to -3 scale for gauging change in status after treatment, much like that proposed for lower extremity arterial disease,[2] in which change in clinical class plus a significant change in a physiologic test value were required in order to claim significant improvement (or worsening).

Subsequently, a consensus meeting of an ad hoc international committee of the American Venous Forum (AVF) was held in Hawaii in 1994 at which the CEAP system of classification of venous disease was conceived and developed.[3] The CEAP system categorizes the basic elements of the venous condition at a given point in time. It separately categorizes the clinical condition of the extremity ("C"), the etiology ("E"), the anatomic location of the problem ("A") and the underlying pathophysiology ("P"). The major value of this classification is to standardize the key elements in a way that patients or groups of patients with venous disease can either be distinguished from each other, or grouped in common classes and compared in a standard manner in reports from different practice groups or institutions. This system was recommended and outlined as the main feature of a revision in the venous reporting standards published in 1995.[4] It has also been promulgated in the Venous Handbook.[5]

Methods of outcomes assessment need to be able to gauge change in status following treatment in a meaningful and objective way, and for purposes of analysis and comparison, are usually quantitative rather than qualitative. When applied to venous disease, outcomes assessment requires a method, or methods of placing the result of treatment in context with the clinical setting and the individual patient's reaction to a particular state of venous abnormality. It should result in a practical analysis of the success of a given treatment over time, whether applied to a group of patients of varying levels of severity or patients grouped into similar levels of severity. Both, but particularly the former, require a quantitative method of gauging the severity of disease. Properly comparing the outcomes of two or more treatments in the same institution, or the reported results of the same treatment from different institutions, or using different adjunctive measures, is not possible if the relative severity of the underlying disease in the treatment groups is unknown or not known to be equivalent. A scheme to gauge the relative severity of disease must not be static but also be able reflect changes in severity with time and with superimposed treatment. The universal use of a system properly designed along these lines, will allow groups of similar degrees of severity to be entered into clinical trials and compared in regard to outcome following different therapies and the reported outcomes following a given treatment by different practices, groups, or institutions knowing the relative severity of disease of the patients in each report. Thus a venous severity scoring system is an essential component of proper venous outcomes assessment.

However a venous severity scoring system will be of limited value if it, or some adjunctive method, does not allow for changes or differences in the background of conservative therapy. Furthermore, in addition to such methods, patient based assessment of the impact of treatment on quality of life (QOL) is needed, and, as these may be too complex for routine clinical practice, a simple venous disability scale is also needed.

The change in venous status scale featured in the current venous reporting standards[4] is conceptually sound, i.e. a categorical change

in clinical status combined with a significant change in an objective functional test in a +3 to -3 scale, but it depends on the reliability of such tests. What constitutes "abnormal" and what constitutes "significant change" in these tests, and which tests and values are appropriate and equivalent for use as objective gauges of reflux, obstruction or global venous function, deserves clarification and standardization.

Currently an ad hoc committee of the American Venous Forum, chaired by the speaker, is developing additional methods of assessment for the standardized reporting of chronic venous disease and its management. They are addressing the needs outlined above and the drafted proposal will ultimately include a venous severity scoring system with clinical and anatomic-pathophysiologic scores (the latter based on duplex findings), recommendations for dealing with a background of conservative therapy in evaluating an interventional treatment or procedure, the identification and grading of factors affecting the long-term outcome of deep venous thrombosis, an updated comparison of venous diagnostic tests and their ability to assess venous dysfunction, a comparison of patient based assessments of the impact of venous disease and its treatment on their quality of life, with a recommended QOL instrument, and a simplified venous disability score. Not all these elements are fully developed or agreed upon, but submission of the final draft for approval is expected in early 2000. The various proposals are too extensive to cover in this brief presentation but some of the preliminary recommendations, such as the different options in the venous severity scoring system, will be presented in order to obtain input from other experts at this symposium.

Caveat: In developing new methods for venous outcomes assessment, especially venous severity scores, it is important to avoid confusion with, or under-mining the existing venous reporting standards and particularly the CEAP classification system. The importance of the uniform classification framework provided by CEAP is acknowledged. The executive committee of the AVF, who own its copyright, while not wishing to change the basic system, recognizes it as a dynamic document which will need to be augmented or changed with time. It is a well developed classification system, but does not fulfill the additional needs outlined above. Thus, the goal of the current ad hoc committee is ***not*** to replace or change any aspect of CEAP, but to augment it with additional compatible methods to further improve our ability to assess venous outcomes.

* Exerpts from an early draft of the American Venous Forum's ad hoc committee on venous outcomes assessment have been used in preparing this abstract.

References

1. Porter JP, Rutherford RB, Clagett GP, et al. Reporting standards in venous disease, *J Vasc Surg.* 1988; 8:172-81.
2. Rutherford RB, Baker JD, Ernst C, et al. Recommended standards for reports dealing with lower extremity ischemia: Revised version, *J Vasc Surg.* 1997;26:517-38.
3. Nicolaides AN, and members of the executive committee. Classification and Grading of chronic venous disease in the lower limbs: a consensus statement. In *Handbook of Venous Disorders*, Gloviczki P, Yao JST eds., Chapman and Hall, London 1996:652-60.
4. Porter JP, Moneta GM, and an International Consensus Committee on Chronic Venous Disease. Reporting standards in venous disease: An update, *J Vasc Surg.* 1995;21:635-45.
5. Porter JP, Moneta GM, and an International Consensus Committee on Chronic Venous Disease. Reporting standards in venous disease: An update. In *Handbook of Venous Disorders*, Gloviczki P, Yao JST eds., Chapman and Hall, London 1996:629-651.

INTERNATIONAL REGISTRY FOR RECONSTRUCTIVE SURGERY IN CHRONIC VENOUS DISEASE

Tomohiro Ogawa MD, PhD
Fukushima Medical University School of Medicine
Fukushima, Japan

Aim

The aim of this study is to develop an international registry on deep venous reconstructive surgery.

Method

A simple questionnaire was sent to vascular surgeons worldwide to determine the level of interest in deep venous reconstructive surgery. Next, we sent a more detailed questionnaire to those who have performed this type of surgery and were willing to participate in the registry.

The initial questionnaires were sent to 180 members of American Venous Forum, 800 members of European Society of Vascular Surgery, 50 members of Japanese Society of Phlebology and 100 members of other vascular surgical societies. In the initial questionnaire, we asked the surgeons if they had performed deep venous reconstructive surgery, and if they had, the types of surgery they had performed. In the detailed questionnaire, we asked for examination level and classification of chronic venous insufficiency, indication, strategy, techniques, follow up, and result of deep venous reconstruction.

Results

We received 186 responses on the initial questionnaire. Seventy-five were from USA, 72 were from Europe, 24 were from Japan, and 15 were from other countries. 73% of the surgeons had experience with deep venous reconstructive surgery. 85% of vascular surgeons in USA, 55% in Europe, 83% in Japan, 80% in other countries, who responded, related that they had performed deep venous reconstructive surgery. Valve repair was performed by 60% of vascular surgeons, and valve substitution was done by 71 %. Femoro-femoral venous bypass was done by 80%. Angioplasty was done by 53%. The ligation of the superficial femoral vein was done by 34%. One hundred four surgeons were willing to answer the detailed questionnaire. To date, we have received 20 responses.

Conclusion

There is an increasing interest in reconstruction of the deep veins in patients with chronic venous disease. The result of a simple questionnaire showed that 73% of the 186 responders had experience with this type of reconstructive surgery.

Continued on next page

VALVULOPLASTY AND PRIMARY VENOUS INSUFFICIENCY

Fedor Lurie, MD, PhD
University of California, Davis
Davis, California, USA
N. P. Makarova, MD, PhD, S.M. Hmelniker, MD, PhD

Objective
The study was designed to evaluate the effect of superficial femoral vein (SFV) valvuloplasty on the progression of primary chronic vein insufficiency in patients with SFV and greater saphenous vein (GSV) reflux.

Design
A prospective, randomized, controlled, two-phase study.

Material
168 patients (169 extremities) with primary chronic venous insufficiency (CVI) were enrolled in phase 1. All patients were treated with elastic compression for 5 years. 128 patients who remained in the study at the end of the 5th year were randomized to have either GSV stripping (control group, n=64) or combination of GSV stripping and SFV valvuloplasty (study group, n=64).

Methods
Clinical assessment and duplex ultrasound examination were the main methods of the investigation.

Main Outcome Measurements
Change in clinical class (CEAP), reflux duration time, reflux volume index.

Results
During phase 1 of the study, two types of clinical dynamics were identified. Stable dynamics in patients with no change in clinical class (n=43), and progressive dynamics in patients with at least one class increase during 5 years of observation (n=82). Increase of reflux was registered in 74% of extremities with progressive dynamics and in 47% of extremities with stable dynamics ($p<0.01$). After surgical treatment, improvement was found in 90% of the extremities with stable dynamics in the control group and in 95% of the extremities with stable dynamics in the study group ($p>0.05$). In extremities with progressive dynamics, 51% of the control group and 80% of the study group demonstrated improvement ($p<0.01$). In 45 extremities after valvuloplasty, the corrected valve remained competent. In 12 extremities, reflux reappeared and in 10 extremities reflux increased starting from 12 months after valvuloplasty. Clinical aggravation was observed in 8% of the extremities with corrected valve and in 50% of the extremities with increased reflux ($p<0.01$).

Conclusion
Correction of a single incompetent valve of the SFV makes a significant difference in the results of treatment and changes the course of primary CVI.

QUO VADIS SESSION

INTRODUCTION
The final session of the meeting is devoted to a consideration of where the field of chronic venous disease should be directed, i.e. where do we go from here?, or Quo Vadis. Each panelist has been asked to summarize his thoughts in a two to three minute presentation to be followed by free interchange between the panelists and the audience.

DR. KISTNER: As an introduction to the Quo Vadis session (where do we go from here) I'd like to ask Mike Dalsing to tell us about his communication with NIH, and some of the activities in the American Venous Forum.

DR. DALSING: Bob asked me to give a little introduction to this part of the symposium devoted to the question: "Where are we going in venous surgery?" because I was privileged back in June of this year to be involved with an NIH study group dealing with clinical research of thromboembolic diseases. The physician group was basically 12 representatives from private practice, academia, and industry. Dr. Gangulu from the NIH called the meeting to order and Dr. Barbara Alving welcomed all of the attendants on behalf of the NIH. Basically there were three major areas of presentation from which recommendations were supposed to be made of high priority for future research emphasis. The presentations were generally of a hematologic or medical slant. I was the only surgeon involved in this group. The first major topic involved hormonal modulation and the risk of thrombosis. Throughout a woman's life basic hormonal changes occur such as during pregnancy, menopause, while taking oral contraceptives, or during the treatment of breast cancer or its prevention. An example of that would be the new Serm's drugs. These events usually place the patient at increased risk for venous thrombosis. Fetal loss may also be associated with hypercoagulability, but anticoagulation also has its down side. So it was thought by the presenters of this topic that the pathophysiologic issues risk benefit stratification for different treatments and for different disease states, and optimal therapy were all potential areas of future investigation. The second topic of discussion involved the epidemiology and genetics of venous thromboembolism. Genetics, as a factor in venous thrombosis, is becoming increasingly evident. We know that ourselves. Just about every year we have more and more possible genetic reasons for thrombosis. In fact, the clinical manifestation of venous thrombosis is probably due to a genetic predisposition triggered by various environmental factors. The presenters thought that the human gene project may actually suggest an ever-increasing number of potential genetic avenues for potential clotting problems and may even provide materials for direct study. The presenters thought that to study each potential genetic deviant path of thrombosis would be impractical. However, a specimen data base of approximately five to 10,000 patients afflicted with DVT in addition to unaffected control, (e.g. relatives) managed appropriately to ensure long-term storage of these specimens for analysis as new information became available might be feasible. The clinical data from these patients might provide a clue to the environmental factors, and even provide long-term results of what happens to these patients with acute disease which later becomes a chronic problem. The final discussion topic was the

optimal management of venous thromboembolism. Optimal medical therapy for the acute event was discussed, as was the topic of length of chronic anticoagulation treatment after the initial event to prevent recurrence. Special emphasis was placed on thrombolytic therapy for patients with pulmonary emboli who were hemodynamically stable but had right ventricular dysfunction. The use of thrombolytic therapy for acute DVT was my assigned topic. Its use for ameliorating the acute symptoms as well as preventing long-term sequelae could be championed based on trends noted in the literature. In addition, I reported on the surgical therapy of chronic venous disease emphasizing the importance of superficial, perforator, and deep disease. Repair of venous insufficiency by valvuloplasty, transposition, and transplantation operations were all discussed. A quick survey of the experts gathered at this conference basically showed that over 50 percent of my colleague participants did not realize that there was any surgical option for these patients at all. They didn't realize that you could impact the deep system in any constructive manner. Obviously the word has not spread from us to our general colleagues in medicine. The high priority recommendations emphasized epidemiology, pathophysiology, and possibly the implementation by the NIH of a program to encourage young investigators to become active in the field of venous thromboembolic research. Many of the topics would be further discussed within the NIH itself to generate a more focused approach. So my general impression is that there appears to be a renewed NIH interest in venous disease. It has probably resulted from the efforts of national organizations such as the American Venous Forum. It's research and executive committee engaged in an active dialog with representatives of the NIH at least two years prior to this working group meeting. Furthermore, national symposia such as the one we are currently attending have drawn attention to this disease as one that people are actually interested in. I believe that my participation as a surgeon in the recent working group was at least partially due to these efforts. My interpretation of the interactions I have had with the NIH representatives suggest an active desire to obtain and consider high quality research submissions, especially with a clinical slant. And, in fact, this whole conference was basically based on the clinical agenda of this disease. My impression is that the NIH has not had recent activity on this front of any significant degree, certainly nothing to the degree to which they obtain arterial research requests. Now exists a window of opportunity to seek funding for venous research projects. It was a pleasure to be involved in this working group. It was eye opening to me to see how things are accomplished. Certainly, I think surgeons, in particular, have very little input into this process in general. But, I think that being involved with this process and understanding the way the NIH seems to be going is critical to any success for future funding.

DR. BELCARO: One of the major problems with venous disease is that anywhere you go the reimbursement for venous procedure is not very high in comparison with arterial surgery. So I think that some stage people working in the field should make known that this is an important factor because many doctors, many physicians, many people working in the field prefer to do an aneurysm, prefer to do an arterial procedure than a venous problem. From our point of view, to do an amputation, which takes really very little surgical skill. You get three times more compensation than doing a valvuloplasty. This is a serious problem which inpairs the possibility of improving this kind of surgery. Now, is this problem considered important (the fact that reimbursement is not really very high for venous procedures)? For instance, considering sclerotherapy, you can treat effectively patients with sclerotherapy, but you don't get too much money. Very often in one hour with surgery you can get ten times more money than doing a nonsurgical procedure (sclerotherapy). So I think that the lack of improvement of all this field and the lack of evolution in the last few years is due mainly to the presence of several regulatory problems including the limited amount of money and reimbursement policy.

DR. DALSING: I think, in general, our ability to educate both our medical colleagues as well as the general population who are involved in reimbursement issues has been a major problem. To change reimbursement, at least in the United States, you have to go through a very lengthy process. You have to modify CPT codes and then, go through a change in billing. It's a major event. In reality, what occurs is that those concerned with this process set a certain number of procedures that they're going to try to change that year. You can not change everything at once. We haven't been aggressive enough in suggesting that venous surgery is one area that has been ignored in this process and is a major problem for our patients.

DR. O'DONNELL: Let me respond wearing my Hospital Administrator's hat. I agree with you, Michael. I think the economic pressure is to reimburse not only surgeons less for procedures such as aneurysms, but also hospitals less. The entire pay scale, if you will, for vascular surgery has been derived from and influenced by the Medicare/HICFA base that our colleague, Dr. Norm Hertzer, and subsequent colleagues labored on our behalf. This scale is based on, if you will, the degree of difficulty of the procedure. Thus a base was developed and then a family of increasing technical difficult procedures was scaled by consensus of vascular surgeons. I don't think valvuloplasty or venous reconstructive surgery has been given the appropriate scale of difficulty. A lot of surgeons have been discussing this situation with Medicare, but I don't think we're going to get any place.

DR. DALSING: I can tell you that NIH's emphasis, at least at the conclusion of this meeting, was more in the epidemiologic and the pathophysiologic fields, especially the problem with hormonal modulation in women. That was a major topic, and I'm sure that's going to be part of the way that the funding is going to go. However, I think that all the things that were presented actually will filter through the NIH hierarchy. Then they'll come up with some kind of focus. One of the other major areas that all of us at the meeting felt was important, all 12 of the physicians present, was that young investigators have to be promoted in this field and maybe actually have a special program for that purpose because otherwise no major change can be expected.

DR. STRANDNESS: Maybe a lot of you don't understand how the NIH works in terms of research, but basically there are two ways you can get money out of the NIH. One is to apply with a specific research proposal. When that is sent to NIH, it goes to the division of research grants. They assign the grant to the study sections. At the division of research grants, the proposal is examined to determine which group should carry out the review. Sometimes your grant will go to a study section that bears very little relationship to the research being proposed. You do not have a say as to which study section your grant will go. We tried very hard to get a study section

devoted to issues related to peripheral vascular disease. The NIH has never approved this even up to the present time. The other way you can apply for money is to apply for directed research proposed by the NIH. The director of the NHLBI has about ten percent of his budget which can be used for targeted research. I served on the cardiology advisory committee for the National Heart and Lung Institute for four years, and during that time I found out how the mechanism works. It's very slow. It's extremely painful. You may spend months arguing over whether one should pursue the research only at the end then you may find the leadership does not approve.

DR. BELCARO: I think that both for grant application, and for the Medicare reimbursement system, the real point in venous disease, and peripheral vascular disease, is that we don't have a hard end point. The most successful field for grants and for reimbursement is at the moment, strokes. In stroke you change or decrease the number of strokes. You may change mortality. So you have a very specific hard point. The point was that after two years of treating these patients with PGE1 you have a decreased number of patients with stroke and decreased cardiovascular mortality. I give you an example. We conducted a European study on claudication, and did a comparison between short and long-term PGE1 treatment and we changed the distance of claudication (i.e. from 200 meters to one kilometer). They said to us "what is your hard-point?" So in venous disease and peripheral vascular disease, if we don't find a hard point which may be really relevant to both regulatory authorities and grant authorities, we're not going to have credibility to get a large grant. We perform all these demanding treatments like valvuloplasty, but what is going to change? The hard point in venous disease is not mortality. It's not morbidity. It's really the cost. So anytime we apply for a grant we have the same problem in Europe. If you apply for a study on stroke, which has been considered the most successful field of grant application, it is relatively more possible to get a grant. It doesn't matter what kind of project you want to do. If you apply for venous disease or peripheral vascular disease, nobody seems to care very much. So in venous disease we need to find a hard point, and I think the hard point in venous disease in this specific topic if you want to study valvuloplasty is the fact that you reduce costs because the patient doesn't come back to the hospital or require treatments anymore.

DR. STRANDNESS: I wish I could look in the future. I always get a little bit despondent when I think about this problem because it seems that from our vantage point and from a research standpoint, there is very little interest in the diseases of the peripheral vascular system. So when you listen to all the work that's being discussed in this meeting, nearly every topic that's been brought up here is crying for good research. This takes money. Randomized trials are extremely difficult to do, they are very costly, and on the other hand I don't see how we're going to settle some of the problems that we talked about today without these trials. If you're going to go through the NIH channels, the review process is very tough. The other issue, which is very important today, relates to the gender and racial mix of your study population. Every three months I have to certify to the NIH that my patients fit the racial mix of our population. If we do not meet 80 percent of the goals, they can withdraw funding. There are only two sources of money, one is private industry with the second being the NIH. Millions of dollars has been spent by private industry to fund research looking at low molecular heparin. I think this is a tough issue. Our field is crying for good research.

DR. KISTNER: Gene, do you have specific areas that you would stratify or prioritize?

DR. STRANDNESS: Well, I think the epidemiology of chronic venous disease is an important issue. I think Dr. Dalsing pointed that out. The NIH appears to agree with that. We need to get epidemiologic data on the impact of the disease on our population. Outcome research is becoming more important because it involves how our health care dollar is spent. If we can show that one form of therapy is beneficial from an economic standpoint, then we have a winner. For example, sclerotherapy versus maybe saphenous vein stripping is an area that could be examined. However, they would have to excite the interest of the study section that is looking at the grant. Industry looks at this from a different standpoint. The most difficult problem is to get funding from the NIH. It may be easier to get funding from industry. Some companies now that are beginning to look at that, particularly with regard to compression therapy. For example, we have received a grant examining the role of support stockings after an episode of DVT. Companies are looking for objective data supporting the use of their product. With regard to valvuloplasty, there will be a problem with numbers to obtain suitable groups for study and comparison. It's a numbers game.

DR. KISTNER: The study of epidemiology, and the collection of more basic data may be along the lines of what Gianni is talking about concerning the cost implications of chronic venous disease.

DR. STRANDNESS: See, Dr. Wakefield is lucky because he's working in an area that has some hard science. I think you are more likely to get funding for that kind of research. I would be interested in Dr. O'Donnell's thoughts on this subject since he is in the forefront of health care delivery.

DR. O'DONNELL: I would like to expand on the research aspect and through it address Gene's questions. It was through the foresight of the executive committee of the American Venous Forum that rekindled relations with NIH. Like Gene, I agree that there will be much interest from NIH when there is some socio-political value to people at NIH to study venous disease, therefore until we define our "constituents" by epidemiologic studies, we will be unable to convince NIH that venous disease is important. Certainly today in vascular disease, it's the age of the woman. A great deal of the funding currently is directed at hormonal influences on vascular disease. In our institution, Mike Mendelson has received several grants centered around the role of estrogen in the vessel wall, and that ties into something that's currently socio-politically important. Thus I agree that until we get the epidemiologic data, we won't be able to influence NIH. Epidemiology is the subject that Bob Kistner has talked about for five to ten years. At every executive committee meeting of the AVF Bob emphasized the need for epidemiologic studies. Where do I think venous research and treatment are going to go? I think we need to look at the target organ of chronic venous insufficiency - the dermis, and understand it better. Under influence of hypertension the skin develops the venous ulcer thus I believe medical therapy will be designed around a better understanding of dermal pathophysiology that will help heal the ulcer or prevent skin from progressing from lipodermatosclerosis and pigmentation stage to frank ulceration. Industry will be very supportive of this research direction because it can be translated rapidly into potential drug therapy. We will see more and more activity in this area. Which is

again, industry targeted. With the loss of urokinase as a lytic agent and physician's uncertainty about the correct dosage of TPA, will see heightened interest in safer and more effective lytic therapy for deep venous thrombosis. In addition something that hasn't been discussed much here at this conference is upper extremity venous disease, and in particular its chronic sequela. As we employ more intravenous catheters for chemotherapy, we need better ways of treating the chronic forms. Finally, the age-old question that is hotly debated is whether elastic stockings are more effective than surgery. And by "surgery" I mean surgery to the superficial venous system for someone with Stage V/VI disease, the NAVUS study will address that question and I hope that there will be NIH funding for that study. Dr. Raju was very eloquent this morning citing the problems with the studies supporting elastic stocking - no pun intended. I feel, I'm sure as he does, that in venous disease we are in a position similar to where the carotid surgery was when carotid endarterectomy for patients with asymptomatic lesions was questioned. We knew it worked, but we couldn't prove it to our medical colleagues until we had the ACAS trial. I think we need a similar type of trial to prove that surgery is effective for advanced chronic venous insufficiency. The first two areas that I have mentioned are definitely outcome and industry related, and I think industry will support such things as that. I hope NIH will support the clinical outcome trial.

DR. KISTNER: Are we talking about acute disease enough or are we focusing on chronic here?

DR. O'DONNELL: I'm focusing on chronic because I feel that our medical colleagues are focusing on acute disease. Perhaps as Gene has suggested, vascular surgeons need to become more involved in the acute disease process in order to develop funding in this area.

DR. WAKEFIELD: The person that was the head of the meeting that Mike was at, Pan Ganguly, who is the leader of Thrombosis and Hemostasis at NIH has told us on a number of occasions that NIH has renewed interest in venous disease. He has actually offered to look at one or two-page abstracts of ideas that individuals have and then help guide those ideas into the correct study section and into the right area of the NIH. So at least there are contacts at NIH who know about venous disease and the American Venous Forum. I believe there is a window of opportunity at NIH that we can and should explore. I think right now NIH is more interested in clinically oriented research than basic science research from us, but I think they would be willing to look at both clinical and basic research. So I believe that if you have an idea that you want to see whether or not NIH would be interested in having you pursue, what you should do is send a one or two-page abstract to the national office of the American Venous Forum, and that will be forwarded on to NIH for feedback. I think that it is remarkable and very good that NIH has made this offer to us.

DR. BELCARO: The European community medicine Control Agency has issued a regulatory observation form for people assessing grants. As soon as you present a grant the most important thing is the hard end point you have. Chronic venous disease is very similar to asthma, for instance, or chronic lung problems, and in these cases the cost (not only the open cost of treatment, but the hidden costs like the number of days lost at work and the quality of life) are the target points. So chronic venous disease is not a disease you can measure with hard points like pulmonary embolism. Why do companies focus on pulmonary embolism? Why do they spend all these millions? Because they have something very easy to show. You treat patients with low molecular weight Heparin and you decrease the number of deaths from PE from 20 to 10. So you have a hard point and it's very easy to show. It's very easy for the companies to produce a new drug because then they convince the authorities that it's very effective as they have a visible hard point. The philosophy of the management of venous diseases is just to follow an example like asthma or something similar and focus on what is the entity of venous disease according to costs and considering all costs together. Until we find a way of selling venous disease to grant authorities and to the Medicare or the equivalent of Medicare, (National Health systems) the quantity of money for venous diseases will be extremely low. There is no progress if there is no money. The industrial support is fragmented in many products, but no company is actually selling anything so important in chronic venous disease so much that the interests can push the research. So the problem we have is what we're doing in venous disease is relatively cheap. And there's no way we can get big grants.

DR. MYERS: With just three minutes to talk, I thought that I would not attempt to give any broad overview of the topic. In particular, I anticipate that other panelists will address some of the important issues of comparing treatments in a scientifically rigorous way. I thought that I would just refer to two areas that have captured my attention recently, even though they are not necessarily the most important areas in this field. First in Australia and I would suspect in many other countries, there has been a phenomenon over the last few years which I find very disturbing. This is the introduction of a whole variety of topical dressings for ulcers made of seaweed and other gloopy materials that are hydrophilic and very costly, which companies recommend be applied in a variety of ways that are very clever according to the nature of the ulcer. The companies have I think been deliberately clever in training many of our nursing staff to learn these new and important techniques. Indeed, if doctors nowadays argue with the use of these preparations, nursing eyebrows will be raised behind their back. At our recent Australian Phlebotomy meeting, one of our colleagues, Gabriel McMullen who is well known to many of you, delivered a paper in which she stated her review of the entire literature on these agents forced her to come to the conclusion, that none had been shown scientifically to be of any better than a simple gauze dressing. You may well refute this but, I think the danger has been the development in our country of a shift of emphasis of treatment to the nursing staff, away from the doctor, and away from the fundamental treatment of the ulcer, I believe, which is compression bandaging. I think these have been to the detriment of good care of an ulcer. This is a fairly mundane issue in the context of trials and so forth, but at the workplace I think it is very important. Although it may tell me that Gabriel was wrong, I think that further rigorous trials are required to show whether the dressings are of value. The second point that I thought I would make is totally different. At the first of these meetings six years ago we were asked at the end to state what we thought would be new when we met again in three years time. I was somewhat desperate for ideas but came up with the statement that I felt that percutaneous endovascular treatment would be a rapidly expanding field. Well, this meeting has shown us a good deal of that, but I think it's just the beginning. Three weeks ago I was extremely fortunate to be at a

meeting in Buenos Aires where at least two groups are doing very interesting work which, just like endoluminal grafting for aneurysms, will create as much controversy as it solves problems, but which the patients, I believe, will want us to embrace. This involves percutaneous occlusion of saphenous veins by capped covered stents, and by occlusion of perforating veins which frankly is a lot more simple than SEPS or anything else we've been doing (by percutaneous coil embolization). With clinical reports of these now appearing in the French journal, Phlebology in particular, I think we'll hear a lot more of them in the future, and I think this will be one of the technical areas that will create its next set of controversies when we meet in three years time. I think that's all I would like to say. The only thing I would like to reiterate is Tom O'Donnell's point that the most interesting trial in Australia, if it could be mounted, would be to answer the very simple question as to whether best surgical treatment is really any better than best conservative treatment for patients with ulcers, particularly in older patients.

DR. GLOVICZKI: My interests certainly at this point is chronic venous disease and in that area, C5/C6 patients with advanced disease and venous ulcerations. The two North American SEPS Registries, that we reported, kind of convinced me that there is much more to do in this area, and the question is not SEPS, and whether SEPS is effective or not. The question is compression treatment cost effective? Does it provide better quality of life or does it prevent recurrence or heal ulcerations and how does that compare to the best surgical management? So the new NIH grant that we plan to submit, really deals with current best management of venous ulceration. If it gets funded, we'll bring more evidence on the effectiveness of surgical treatment versus best medical management. SEPS is the secondary issue of this grant, and not the primary issue. The primary issue is what's the best treatment to prevent ulcer recurrence? The secondary aim is ulcer healing and rapidity of ulcer healing, and then tertiary aims are if SEPS is effective in addition to superficial reflux ablation, what is the hemodynamic benefit, and what is the quality of life and what is a cost effective treatment? The American Venous Forum is an ideal organization to support, organize, and conduct this study because we need 30 centers with ten patients per year into the study, C5 and C6 patients. The design is obviously a multi-center prospective, controlled and randomized study. One arm is the best medical treatment and a second arm is surgical treatment. We are going to plan to enter 560 patients into the study, and on Page 64 of your handout I described the design of the study which will be called the NAVUS trial which is the abbreviation of North American Venous Ulcer Surgery Trial. The surgical arm will be randomized to two groups: one with stripping and ablation of superficial reflux with avulsion of varicose veins, and the second will be stripping, ablation, and SEPS. It is a long study. It's five years. We will need your support if it ever gets funded.

DR. KISTNER: And the funding will come from NIH, federal funding? You don't have any other source?

DR. GLOVICZKI: The funding has to come from the NIH because of the magnitude of the budget. I have fortunately fantastic support at this point from multiple departments of the Mayo Clinic which includes two biostatisticians, the chairman of the health science department, two economists, and a department which is called the MPAC, which is the Mayo Physician Alliance Center which is specialized to multi-center studies. They will set it up, instruct the centers, put the questionnaire on the Internet, collect the data through the Internet. So the support service appears ideal, and that's why I have decided to submit this proposal.

DR. DALSING: The only question I have is how are you going to accomplish the quality of life assessment or the cost containment issues because I think those are two important end points that the federal funding agencies will consider. I think healing the ulcer is important clinically but really doesn't make an impact on the people who must fund many important projects. They want to know if it's going to cost less and what's going to happen to the quality of life of a large group of American citizens.

DR. GLOVICZKI: That's right. Well, again, that deadline is February 1st, and I obviously need a generic quality of life assessment just like the short form 36, but we also need an English language disease specific quality of life questionnaire. The best that I got at this point was from Dr. Comerota. I think that is currently probably the best that's available for us.

DR. RUTHERFORD: In regard to the quality of life questionnaire, I commented in my talk earlier today that there are three of them, and if Tony Comerota is here he might comment on this, but the one that he used has 80 questions on top of an SF-36. That's a lot to handle. One of the things that our subcommittee is trying to do is come up with a better quality of life questionnaire. Now for my own comments -- there are three major points I want to touch on. We've had a reality check from Gene Strandness about research funding. Gene usually gives us a reality check, and it's usually pretty depressing, but it is what the situation really is and it's important that we understand it. Then Mike Dalsing told us he was the only vascular surgeon on this 12-man committee on venous research and nobody else on the committee had even heard of venous surgery being an option. So I think recognition is a problem and maybe we have to somehow redress our product a little bit. Consider how well Orange Roughy has done in restaurants after they've changed to that from its original name, the New Zealand Slimehead. But I think maybe we have to redress our product in relation to what's best for the patient. We tend to think of what's best for ourselves, but if we can put things in terms of what's best for the patient, it will be more accepted, and patient based assessments are an important point of this thrust. I'm glad that point came out. Now we all would like to see progress in the diagnosis and treatment of venous disease in the new millennium. The question is how do you best achieve these broad goals. One, of course, has already been mentioned before, namely basic research but the focus has been on obtaining NIH funding, and in turn on achieving recognition by the NIH. But I agree with Bob Kistner, I think we need to educate the NIH, in terms of what the patient needs and not what NIH currently perceives it wants. I think we should approach it in that way. In terms of basic research, we tend to think in terms of the basic methodology and molecular biology, you know, oxygen radical, cytokines, leukocyte adhesion, and so forth, but we really haven't studied the basic pathophysiology yet. For example, we've been lysing clots with lytic agents for years yet we don't have good studies to show what these lytic agents do to endothelium. We're using them all the time and increasing high dose UK, all that, but nobody has really studied their effects. We've been talking here all this week about how soon do you have to remove venous clot to get an effective return of venous endothelial function and preserve the valves and so forth, but

nobody has done the basic research of serial removing of clot X number of days after thrombosis and studying the underlying changes and when they become fixed and irreversible. I could go on and on. There's a lot of basic research to be done, but it doesn't have to be complex. There's a lot of basic pathophysiology studies that deserve to be done. The second point I want to make is while I continue to be impressed with how much experienced thinking, technical skill and careful, detailed observation my colleagues put in their clinical studies, I am also impressed with how little our colleagues in other fields pay attention to what we do. I'm getting back to the matter of recognition again. We are routinely dismissed by Russell Hull and his colleagues as not having Level 1 evidence, and we're looked down at by people who are career trialists. But it's easy to do prospective randomized trials for new antithrombotic drugs, for example, low molecular weight heparin. These are easy to do, but it's very hard to develop that kind of data for chronic venous disease. You can't solve everything with randomized trials. It's hard to apply to emerging technology, particularly if the procedures are applied sparingly, as they probably should be. The numbers are small and the patients don't want to be randomized. They want the new treatment. Nevertheless we have to change the way we do clinical research. We've got to get away from these uncontrolled observational studies that we keep reporting to each other. Even though there may be a lot of important observations in them, uncontrolled clinical trials or studies must be eschewed. If we can't do prospective randomized trials, then we need to at least do controlled comparisons, with comparable cases based on disease severity scoring, but also using improved methods of outcome assessment. We've talked about some of them, particularly quality of life instruments and other patient-based assessments. In addition we need cost effectiveness studies. If we can address the cost of different options in treating venous disease we're going to get attention. Obviously things like uniform reporting standards go without saying. I think we can upgrade our clinical studies to a level of evidence which is quite acceptable without necessarily trying to solve everything with prospective randomized trials. The third area involves communication and education. I'm really concerned that the physicians who first see patients with acute and chronic venous disease, the primary care physicians, internists, and other specialists don't know nearly as much about these problems as we do, and yet they are on the front line in terms of decision making. I think somehow we need to change this, and I thought of how we might do it. One solution would be to band together and develop management decision algorithms that are society approved on the management of acute and chronic venous disease. I think they could have some impact. They should impress HFCA and other third party health care decision-makers. The problem I see with that approach relates to something we have observed with the expert panels at this meeting, namely no one seems to be able to agree on how to manage a particular case. So how can we tell other physicians, and come up with management algorithms until we can agree among ourselves. Those are some of the thoughts I had, but my final thought is that we should take a page out of our hosts' book. They have developed this wonderful venue where venous experts from many different countries come together and exchange ideas, and I think we need to do that more. I think we should give our hosts a show of appreciation for showing us the way, the way we can make more of an impact on the progress of the management of venous disease. Let's make this an international effort. Thank you.

DR. STRANDNESS: I strongly believe that we must publish some of our best work in non-surgical journals. We must get our message to the general medical community. The best studies we have done from my laboratory in Seattle have gone to non-surgical journals. For example, "The Shrinking Kidney" was published in the American Journal of Hypertension, the next follow-up was published in Kidney International, and the last one on "Natural History of Renal Atherosclerosis" was published in Circulation. You don't get the attention you need from putting it in the Journal of Vascular Surgery. If I want to talk to surgeons, okay, I'll go to the Journal of Vascular Surgery. If you publish in non-surgical journals, it has a big impact. An example of how this can work and get national attention was the issue of "The Shrinking Kidney" and its relationships to the problem of ischemic renal failure. When that issue became known to the nephrologists and the internists, the interest in duplex ultrasound to detect renal artery stenosis increased. Duplex has been accepted by the FDA as a method of not only selecting patients with the problem and for follow-up as well. There are two national studies being done looking at the role of stents in renal artery stenosis. This all came about because the nonsurgical community became aware of the problem. The other problem is it's tough. The review process for the best medical journal is very difficult. However, if you make it through the review process, a lot of people are going to read it. The medical journals such as the Archives of Internal Medicine have a wide distribution. I think that one must pick a good journal and go with it.

DR. PERRIN: As I started the job, my first concern was how to prevent recurrent veins after surgery. Two hundred fifty thousand patients are operated on every year in France for varicose veins. That is a lot of money, and the rate of recurrence is between 10 to 30 percent. So we really need prospective studies to identify all of the possible factors that contribute to recurrence including general factors, techniques, classification of disease, and so on, because that is very important in terms of cost. I think that in the future venous surgery will change very quickly. Invasive endovascular surgery, as previously mentioned by Dr. Myers, will replace ancillary procedure. That is not only true for deep venous surgery but also for superficial venous surgery, but in order to know our efficiency the new treatments will have to be very careful to include an estimate of cost effectiveness of the new treatments. To achieve outcome of treatment we have to evaluate patients precisely clinically for treatment. CEAP is a clinical classification that can be perhaps extended or completed as proposed this afternoon by Dr. Rutherford. State of art of instrumental investigation have been established by Dr. Geux in a meeting in France, and probably the next step will be to try to establish a correlation between clinical findings and hemodynamics. We need that.

DR. RAJU: Bob and Bo, thank you for allowing me to participate in this wonderful meeting, and the free-for-all this morning especially. If we look at valve reconstruction data, if you look at survival curves for axillary vein transfer, for example, you would find that there is a 30 percent loss in the first year. The bulk of the loss comes within a couple of months actually. This is not due to thrombosis because the axillary vein conduits remain open. I was talking to Roger Lane who had done a lot of animal work. He told me that if

you put PTFE around these axillary vein valves, there is an encroaching fibrinization invading the valve. Maybe that's why we are losing 20, 30 percent of these valves in the first few months. In previous conversation with Dr. Peter Gloviczki, he told me that I should be using silicone rather than PTFE wraps because, with silicone, there is no connective tissue reactivity at all. So that's what we are doing. We are beginning to put silicone wraps around our axillary vein grafts rather than PTFE. In the same context, if you look at direct valve reconstruction, not axillary vein valves, the same type of phenomenon happens. You lose about 20, 30 percent rather quickly after valvuloplasty. Roger Lane told me that he has done angioscopy of these valves that were repaired with sutures. He saw that after a few months the valve station dilates and the sutures tear out. Dr. Kistner had re-explored an external valve repair and seen the sutures tear out. So it seems logical to me to wrap these valves after valvuloplasty with some type of support so that they don't tear out. Now, the results should be available pretty soon because you can follow this with duplex and calculate the rate of duplex deterioration for valves that are wrapped and those that are not wrapped. As you know, in chronic venous disease no matter what you do, stripping or valve reconstruction or whatever, swelling may improve, but it's a very gradual process over a period of time. In many patients it may get better, but it does not completely disappear. But with iliac vein lesions you can often see dramatic and complete resolution of swelling with stenting. It's quite exciting to me. We do not have objective measures of either swelling or pain. I came across a publication recently where there's some work being done with functional MRI scan looking at pain in the cortical areas. The traditional view is that pain is centered in the sub cortical areas, but with functional MRI some evidence is building up that this is actually a frontal lobe activity in chronic pain syndromes. So we may be on the threshold of having some type of objective test to measure pain as linked to chronic venous disease. I think this is terribly important in patients who want to claim disability because they still have pain. Objective evaluation of swelling, I think, is a little bit more difficult. Together with Dr. Neglen, we have in our own practice instituted questionnaires to assess swelling. One is to ask the patient if the swelling is better or worse. We all know that's terribly subjective. Somewhat less subjective is to ask the patient if the swelling goes down at night, how soon does it maximize on the next day. That gives you, I think, a somewhat less subjective measure of what the swelling is doing. And finally we plan to do plethysmography at the end of the day, put the patients to bed, and do plethysmography again first thing next morning before they get out of bed. Finally, what about venous physiology? I think most of the circulation research is focused on arterial disease, and our concepts are extrapolated from our experience with arteriograms and arterial disease to venous disease. For example, in the last two days we have debated the saphenous vein being the sole outflow from the leg, which I think is a hangover from our interpretation of arteriograms. In the venous system, if you have as little as one or two millimeter gradient difference, the flow pattern is going to change. Some of our ignorance in the area, I think, is because there has not been an analysis of the venous system on the basis of what is already known in hydraulic engineering. There are books on networks, and the veins are the ultimate network in the body. Of course, you throw in a wrinkle by putting in collapsible tubes, but all of that knowledge is available in fluid mechanics. It just has not been applied to venous system.

DR. RUTHERFORD: Gene and I were just talking, and we had talked earlier about the web master for the American Venous forum web site, and it reminded me that one of the things we have not mentioned today and should not overlook is the potential for what can be done on the Internet in terms of recognition of venous disease and its proper management. I think we really need to think about how to use the Internet in gaining proper recognition.

DR. MYERS: In Australia we have two societies, the Australian and New Zealand Society of Phlebology, which is primarily surgical, and the Sclerotherapy Association of Australia which is predominantly nonsurgical phlebology. The Sclerotherapy Society itself has a 15, 20-page web site, and all of its members would have their own web site. It would be bad business not to be on it. The hit rate for those and the work generated are apparently phenomenal. This may be a purely commercial activity, but it can also be a good educational activity. I recently accidentally got onto another web site because of a new procedure I had done, and my secretary was overwhelmed for the next month by the response. You're absolutely right that people are obsessed by this now, and many will simply not go out and seek treatment until they've checked it out on the Internet.

DR. GLOVICZKI: I just have one sentence to say. I tried to reserve SEPS.com and was disappointed that it's taken. It's a hot web site, Gene. Sony took SEPS. It's actually the web site of Sony Electronic Printing Services.

DR. DEPALMA: I feel most humble in commenting because there have been many wise things said. The basis of science has got to be quantification. I think Drs. Tom O'Donnell and Gene Strandness and Robert Rutherford all hit on that. The thing to look at is the effect of venous hypertension on the dermis which can be impacted in a variety of ways which can be quantified, and in my opinion, this has been done in a preliminary way. There is no question that effective surgery will yield much less time with an open ulcer, much quicker healing, and many fewer recurrences. In fact, we ourselves did this study with cohorts in a cross over study. I believe that what Dr. Rutherford said is very right. I worry greatly about the tendency for people to just cite prospective randomized control, as the answer to all issues. The best approach would be surgical versus but medical therapy for venous disease. Actually, in surgical matters, perhaps only 40 percent of surgical interventions can be gauged. Yes, you can do prospective studies with Heparin and low molecular weight Heparin or these can be done with antibiotics dealing with a single or a few variables. When you deal with comparisons of particular surgical interventions there is a need to do a cohort precisely matched study. I would not restrict interventions in the venous system to one or two interventions. As we learned today, enormous disparity amongst effective approaches to the venous system exist. The case that Dr. Kistner showed us with the effective anastomosis of the Giacomini vein and the lateral femoral vein is something that none of us thought of. And, in fact, this worked. So in terms of the basic science of the venous system, I think the problem is that the venous system is a chaotic and fractal system in the true sense of that word. There are mathematics to deal with fractal systems. The mathematics of chaos is still a little beyond us and our linear thinking. If we could focus our efforts on understanding how a small change like one competent valve at the origin of the superficial

femoral vein might change the dynamics at the ankle, we will be on our way to a better understanding. I feel quite humble in closing this symposium with another comment. I do not believe that we completely understand the anatomy of the venous system and its variations. I think that there are misconceptions about how many perforators there are, where they are and which ones should be interrupted. Jan Holm's study shows that most of these are halfway up the leg, but also the intra malleolar ones can be important. I thank you for the opportunity of commenting.

DR. GOREN: I have always looked up to the academic surgical establishment for knowledge, guidance and education, public education included. While I am not part of this establishment anymore, this attitude of mine has not and will not change. I am concerned, however, that your voices as educators of the lay public in the field of vein disorders is not heard at all or only very little. You are too isolated in your institutions and the public does not hear you loud and clear. The written and electronic media is using false "gurus" who are misleading the naive reader or the listener for their own selfish interests. The tabloid National Enquirer of June 1, 1993, published an article on guided injection treatment for varicose veins. Moreover, just recently, the November 1999 issue of Allure magazine already reported about a new and "revolutionary" method for treating varicose veins. We all know the fate of the guided injection method as well as the still questionable results of the radio frequency approach remain unsubstantiated as presented in this meeting. I would like to see the academic surgical establishment and/or the American Venous Forum more involved in public education.

DR. KISTNER: I think we have to make our case in America for the importance of venous disease because there's a lack of general realization of how frequent it is, how much time lost from work there is, or how much pain, suffering and disability comes from it. I think we have to look toward demographics and epidemiologic studies performed here in the U.S., and that they be based on objective testing. I think we have to gather data about the cost of chronic venous disease, and probably of acute venous disease, in order to make known what a huge impact this is. Given that sort of data, I think we can command attention. Prior to that I don't know if we can. And, of course, going along with all of this is the need for education, which is enormous. It's not just the public that needs education, it is also our own profession. All of the comments that were made about where we publish our data and get the word out are very germane.

One of a kind.



Unmistakable.

At MIEC, we know what it means to stand out in the crowd. Twenty-five years ago, we started the West's first doctor-owned, not-for-profit malpractice insurance company. The idea quickly caught on, and now there are dozens of "doctor-owned" companies throughout the country.

But there is only one MIEC. Our rate and dividend history is unparalleled. Guess that's why we don't need a large sales or marketing staff. Our track record speaks for itself.

The original is still the best. Call us.

Medical Insurance Exchange of California
6250 Claremont Avenue, Oakland, California 94618
Telephone 800-227-4527 www.miec.com
HAWAII CLAIMS OFFICE: 1360 South Beretania Street, Honolulu, Hawaii 96814

Our 25th Anniversary, 1975–2000

Sponsored by Hawaii Medical Association

Hot Spots In Dermatology 2000

Clinical Dermatology
Coding & Computers In Medicine

August 18 - 20, 2000
Manele Bay Hotel
Island of Lanai

Exploring the present & future of informatics in your practice. Productive updates on billing & coding. Cutaneous medicine.

Dr. Douglas Johnson
Dr. David Elpern
808-531-7541

dwjohnson@pol.net
kauai@bcn.net
http://come.to/hotspotslanai

Janssen Pharmaceutica

Is proud to support the Hawaii Medical Journal

World leader in antimycotic research

JANSSEN • PHARMACEUTICA • • RESEARCH FOUNDATION •

Titusville, NJ 08560-0200

®1998 Janssen Pharmaceutica

Aloha Laboratories

...when results counts

A CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

- **Surgical Pathology**
- **Dermatopathology**
- **Cytopathology**
- **Gynecologic Pathology**
- **Frozen Sections**

David M. Amberger, M.D.
Laboratory Director

2036 Hau Street, Honolulu, HI 96819
Phone (808)842-6600
Fax (808)848-0663
ALOHALABS@WORLDNET.ATT.NET

Arleen D. Jouxson, Esq.
Attorney at Law



A.K.A. Arlene Meyers, MD, MPH

- **Wahiawa pediatrician since 1979**
- **Associate Clinical Professor, JABSOM**
- **1998 Roscoe Pound award winner in health care law**
- **President & founder of the Hawaii Coalition For Health**

NEED HELP?

- **with Par. Agreements?**
- **Understanding health care laws?**
- **Resolving disputes with health insurers?**

CALL 621-8806 (Oahu) for more information or for a free initial consultation at your place of business.

302 California Ave., #209, Wahiawa, HI 96786, Ph: 621-8806; Fax: 622-5599

News and Notes Henry N. Yokoyama MD

LIFE IN THESE PARTS...

"America's health care system is in appalling disarray...Health care is in crisis all over the country... When Hillary Clinton was pushing her health care reform, like many physicians, I didn't want nationalized medicine... But what's going on is infinitely worse. I believe the system is ready to implode." Says Arleen Jouxson-Meyers, physician-attorney.

Jouxson-Meyers now has her sights on HMSA which has a near monopoly and contracts with 95% of the state physicians..."Doctors and hospitals have no choice but to accept whatever contract HMSA shoves down their throats," she says..."Our hospitals are threatened with bankruptcy...We must put medical decisions back in the hands of medically trained people."

Just who is Jouxson-Meyers? She was a young GP in Johannesburg, South Africa, who saw inevitable revolution and fled her country with her electrical engineer husband and landed in Hawaii. She trained at Kauikelani Children's Hospital and got a master's degree in public health from UH. She entered UH Law School in 1995... "It was disgust with managed care that drew me into law school. The health care industry was too profit motivated and too little concerned with the needs of patients." She organized the Hawaii Coalition for Health even before graduating law school and got her torts professor, Richard Miller, as a pro bono legal consultant.

The Coalition now claims 1,100 members (500 are physicians) and she now runs a part time law practice representing physicians in disputes with medical insurers. "We've been able to hold HMSA accountable for the first time in 60 years."

"They think I'm that crazy woman with the crazy ideas who just wants to raise doctors' fees...They are not seeing all the little bits and pieces that are adding up to a collapse of quality health care all around the country."

"What's intriguing to me about the U.S. is that there are so many more opportunities to make a difference than people in other countries. You can effect change, if you are willing to speak up and to devote the time and energy and commitment it takes to achieve it."

Excerpts from Mid Week...Kathy Titchen

POTPOURRI...

LOW WHAT? A soft spoken, prim and proper little lady came into my office with the signs and symptoms of esophagitis.

I explained in detail the physiology and pathogy of GE reflux and suggested LOSEC for a month.

One month later, she returned with an expression of happiness, but with an underlying concern...

She explained that the heartburn and chest pain were both gone...Then after some seconds of awkward silence, she shyly asked if she and her husband could resume sexual intercourse.

Apparently the change in diet, daily pills and "low sex" had worked, but her husband didn't believe abstinence had anything to do with heart burn!

Dr. G. S. Norman

CONFERENCE NOTES...

"Erectile Dysfunction in the Patient with Ischemic Heart Disease"
VP Paul Fenster, U of Arizona College of Medicine, March 17, QMC Kam Auditorium...

Introduction:

ED is a common problem, but should not be a problem in cardiac patients...

Organic cause: atherosclerosis esp in cardiac patients... In male diabetics: over age 55 , 1/2 of the patients have ED...ED risk factors: a. high total cholesterol b. Low HDL c. Cigarette smoking d. High BP...

Iatrogenic Factors:

a. Medication: Assume possible link of ED to medication esp BP Rx.

b. ED and atherosclerosis: Cardiovascular effect of medication in CAD pts: Av peak HR: 110-127; 2.0 – 5.4 METS

Myocardial ischemia during sexual activity occurs in CAD patients... Fear of MI in men with CAD: In reality, sexual activity increases risk of MI by 10 in a million. Holter monitor in pts c known CAD: EKG ischemia in 1/3 of pts: 2/3 are silent and 1/3 have angina.

Comparison Holter Monitor & Symptoms:
Symptomatic = 6; Silent ST= 21; None = 61
Total: 85

Sexual activity in pt's c CAD: Pt c 5 – 6 METS on EST without EKG ischemia or serious arrhythmia is not high risk.

** in 19 pts, 1 with angina during intercourse was abolished c Beta Blocker... Vast majority of coronary dysfunction patients , need not restrict sexual activity. Fear will precipitate MI... Sexual dysfunction in men with CAD... Most often due to fear of precipitating MI (10-15% due to organic causes)

re MI Triggers with sexual activity: Low absolute risk and prevent by regular physical exertion.

Triggering MI during sexual activity:

a. Low risk patients:
   1 in 10 per hour: 1%/yr;
   2 hr post sexual risk; increased risk 2 per million per hr = 1.01%

b. High risk patients:
   Increased risk 10 per million per hr.

Factors increasing cardiac risk during sex:
a. Unfamiliar posture. b. Unfamiliar setting c. After excessive eating d. After excessive alcohol...

*** Sildenafil & Nitrates: Efficacy demonstrated in multiple dysfunction; nervous reflexogenic (Spinal cord injury); psychogenic

Physiology of Erection: *NO → relaxation of arteries of penis

L-Arg → NO → Activates Guanylate cyclase
↓
Erection ← relaxation ← GMP
Corpora artery ↓ PPE5
Inactive
GMP

Sildenafil (Cardiovascular Effects 4 hrs)
Lowers BP: Systolic 8-10; Diastolic 5-6
Safety: > 5700 patients in trial:
Mortality lower in Viagra patients than in placebo patients...

***24° Absolute Contraindication with Nitrates: Also c Amyl nitrate but not c nitrous oxide. Absolute 24 contraindication with Nitroglycerine.

What to do in patient with chest pain a/c Sildenofil...
Treat usual way without giving nitrates... (for 24 to 48 hrs)
Therapies to consider: Trendelenburg; aggressive fluid restoration; Judicious IV alpha agomist use; Careful Alpha & Beta agonist use; Intraaortic balloon pump

POTPOURRI...

"I've Finally Begun to Live."
Dr. Richard Garcia

I've asked myself whether choosing pediatrics is some melodramatic attempt to compensate for my past. Am I trying to be a protector of children, an expert on child rearing because I'm rejecting with all my soul my own childhood?

I don't have a good answer. Perhaps that theory explains my own motivation. But pediatrics is also its own reward. There's no way to tell people how good I feel when I treat a child who's close to death then see him sitting up and see him eating ice cream a few days later. There's nothing like it. It's a high.

This is why I live. It seems strange that now – after all the horror, the tragedy, the death – I've finally begun to live. I realize that although death felt so right for so long, it's life that I want...Life is so good."

Medical Economics Mar 27 '95

An astronaut was asked what he thought of just before take off.. He said, "I think I'm sitting on a complex device made up of over several thousand parts, each of which was manufactured by the lowest bidder."

Isaac Asimov

She was the kind of girl who wouldn't hurt a fly – not unless it was open....

A.T. Whittaker MD

"I wrenched my back and walked like a question mark for months."

A Marty and Charley Commercial...

Medical Tidbits

Osteoporosis Update: A recent study showed that one injection of a natural protein osteoprotegerin (OPG) reduced cellular bone breakdown by 80% in post menopausal women tested. "Researchers feel that OPG will be a direct and perhaps safe and simple drug for reducing fractures in elderly people," says Steven Cummings, osteoporosis expert at UC San Francisco. The chief complaint with OPG is that it is given as a monthly injection.

New Alzheimer Study: About 45% of MCI (Mild Cognitive Impairment) patients develop Alzheimers within 3 years, according to scientists at Mayo and UCSD.

The National Institute on Aging will fund research in 65-80 centers in the US and Canada for volunteers ages 50 to 90 with MCI to test ARICEPT (donepazil) against Vit E and a placebo in preventing or slowing down progress from MCI to Alzheimer's.

Prostate Update: Patients with confined, early stage prostate cancer have an option of implanting tiny radioactive seeds in the prostate, which may be as effective as surgery and with fewer side effects per a recent study at Seattle's Northwest Hospital.

Another recent study shows that in moderate or high risk prostate cancer, seeding is inadequate and require surgery or external radiation for better survival rates per doctors at Harvard Med School and the University of Pennsylvania....

Elli Fiedler, 61 yr old housewife in Germany developed an egg sized renal tumor., Scientists concocted a vaccine from her own cancer cells and a healthy donor's specialized immune system cells and wiped out the tumor within 3 months.

The study was reported in the journal "Nature Magazine" in March. Of 23 advanced kidney cancer patients treated with the vaccine, five have been cancer free for 11 months and three others had dramatic tumor shrinkage. In a dozen others, the disease has progressed.

The study's small size and short duration are viewed with tempered enthusiasm by scientists. H. Kim Lyerly, Prof of surgery, Duke University says, "Encouraging results like this deserve further study to prove it works."

Powerful Predictor: Researchers report that high sensitivity C-reactive protein (hs-CRP) may be more closely related to heart attacks than cholesterol. A study of 28,000 healthy women with high levels of hs-CRP were 4 1/2 times as likely to have a heart attack or stroke (even with normal cholesterol levels) . The test is inexpensive and has been approved for use since late last year.

Glucosamine & Chondroitin in Humans? Analysis of eight trials involving 1500 people (daily dose 1500 mg glucosamine or 1,200 mg chondroitin) confirmed that arthritic pain is relieved more effectively than with placebo. Chondroitin was slightly more effective than Glucosamine (larger and longer studies are still needed.)

FYI

The Hawaii Skin Cancer Coalition will be sponsoring a Skin Cancer Prevention Fair on May 28, 2000 from 11:00 am - 3:00 pm at Windward Mall. There will be free skin cancer screening by the Hawaii Dermatological Society, educational exhibits and games and prizes for the keikis. Local sport figures will be present to talk about the importance of sun protection in the prevention of skin cancer. For more information, please call the American Cancer Society at 487-8420.

Nurses the  *of Healthcare*

Registered Nurses, Licensed Practical Nurses, Medical Assistants

Qualified and experienced in a wide variety of job settings.

All applicants carefully screened and matched to your specific job.

We are fully responsible for payroll, taxes, benefits and insurance.

Kahu Malama Nurses, Inc.

Short & Long Term Staff Relief and Permanent Placement

Serving Hawaii since 1982

Available 24 hours

(808) 951-0111 Fax: 949-3834

Inter-island: 1-800-773-9021

e-mail: nurses@kahumalama.com

Classified Notices

To place a classified notice:

HMA members.—Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.

Nonmembers.—Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Office Space

ALA MOANA BLDG.—PHYSICIANS WANTED to share space and support services. Interest in physical rehab. preferred. We have flexible rental arrangements starting at one half-day per week . Run your practice with no fixed overhead. Contact Dr. Speers, REHABILITATION ASSOCIATES, 955-7244.

QUEEN'S POB I.—SPACE TO SHARE. Large office. Two physician offices and two exam rooms available. Full or Part-Time. Office space available for your staff (2) or staff available to share. Contact: 537-9595.

Wanted

PSYCHIATRIST.— Kaneohe residential Program for adolescents seeks consultant two half-days per month. Schedule, duties, compensation negotiable. Contact Administrator: RAINBOW HOUSE 239-2399.

HAWAII PERMANENTE MEDICAL GROUP.— Kaiser Permanente. Hawaii's most established multi-specialty group of 300 physicians recruiting for:

- BC/BE internal medicine hospitalists, staff and Locum Tenen positions available, servicing all hospitalized patients in 200-bed Kaiser hospital on Oahu, position(5) immediately available.
- BC/BE general internist for busy outpatient clinic, inpatient duties (CCU/ICU/ventilator management) and call, practice based in Kona on the Big Island (affiliated with Kona Community Hospital.) Position available mid-August 2000.

Applicants must have a commitment to quality care, patient advocacy, and involvement in patient and professional education. We offer competitive salary, comprehensive benefits, relocation assistance and more.

Send CV to: Physician Recruitment, HPMG, 3288 Moanalua Road, Honolulu, HI 96819 or Fax (808) 834-3994. EOE

PALI MOMI POB.—PHYSICIAN WANTED to share in newly renovated office. We offer flexible rental arrangements starting at one half-day per week; support services optional. Run your practice with no fixed overhead expenses in a great location! Contact Dr. Ramin C. Jamm, MD, at 486-8630.

The Weathervane Russell T. Stodd MD

A Horse Never Runs So Fast As When He Has Other Horses To Catch.

The Visx/Summit laser stranglehold on user fees for their lasers began to weaken last year when Nidek came on the scene with no user fees attached to their lasers. Patent litigation followed. Now the cost of surgery is going down as Visx cut their user fee from $250 to $100, and Summit is scheduled to follow suit. LaserSight Inc., based in Orlando, has stated they will decrease their user fees as well. Moreover, the competition is getting hotter due to lower fees being offered by surgeons in Canada. A trip across the 49th parallel might save hundreds. Because the procedure is considered cosmetic, no third parties are involved, and potential clients shop for laser surgery much as they do for face lifts, hair transplants, breast augmentation, and tummy tucks. The outcome is a downgrading of surgery fees with more cuts in sight, as competition continues to roil and boil. Meanwhile, lawyers are watching as the patent challenge billing hours accumulate, and laser company stocks are falling. Who would have guessed that the advent of refractive laser surgery would bring a contest resembling a demolition derby or a pack of pit bulls fighting for survival.

The White House Is Really Dull Without Monica And Hillary.

A great sigh of relief was heard when President Clinton said he is "categorically opposed to medical errors"(duh). His sudden concern relates to a study by the Institute of Medicine based upon old data collected in just three states - 98,000 hospital records in 1984 in New York and 44,000 records from Colorado and Utah in 1992. Extrapolating from these dusty figures, the Institute reported deaths due to "adverse events" somewhere between 44,000 and 98,000 nationwide per year! Even the people most closely associated with the IOM study have their doubts as to its validity and application to present medical care. But fear not, the solution offered by the big LD (lame duck), is yet another agency, the Center for Quality Improvement and Patient Safety. Do we really need yet another useless army of auditors to verify hospital reporting?!

Leadership Is The Ability To Hide Your Panic From Others.

In 1996, Aetna purchased U.S. Healthcare, its biggest HMO acquisition, and Aetna stock soared to $100 because the market believed in managed care. Now the stock is down to $40 because investors no longer believe in managed care. HMOs are moving out of the cost-control focus due to law suits, painful publicity, legislative threats, and simple exhaustion. Managed care is a doomed model because it cannot do what was claimed, that is, control costs without antagonizing its customers. Richard Huber, Aetna CEO, admits that in five or 10 years most businesses will provide employees with vouchers to buy health insurance. They will pay the difference out of their own pockets if they want gold-plated medical care, a system already pioneered by Xerox and others. The simple truth is that the public wants their doctors answering to the patient and not another master, a fact fee-for-service docs have been shouting for many years. Let's all give ourselves a big hug and kiss.

Vice Often Rides In Virtue's Chariot.

In 1996, the prestigious New England Journal of Medicine (NEJM) published an editorial favoring the diet drug Redux which was written by two researchers. Later it was admitted that they were paid consultants to the company that developed the medicine. Now, the current editor, Marcia Angell, (NEJM has gone feminine like the JAMA), has written a mea culpa letter to readers admitting similar violations of their own disclosure guidelines by publishing drug evaluations written by doctors with conflicts of interest. Going back to 1997, 19 instances were found in which authors received money or research support from drug companies to write articles on drug therapies. This admission comes at a critical time for the NEJM, trying hard to keep its reputation as the pre-eminent medical research publication. It was just last year that the editor was fired (his contract was "not renewed") for opposing planned commercial ventures. It seems like only yesterday when then editor Arnold Rellman, M.D. was lecturing to doctors and the AMA about ethics. What goes around, comes around.

No Government Has Ever Been Or Ever Can Be That Does Not Have Blockheads Uppermost.

Those over-zealous fraud people with the Dept. of Health and Human Services are now looking at the rent that doctors charge medical suppliers who rent space. Inspector General June Gibbs claims she has received reports that some suppliers whose business depends on physician referrals are charged excessive rent. She stated that rental in excess of the suppliers' needs creates a presumption that the rent is actually a kickback. AMA Trustee, Timothy Flaherty, M.D., said that laws concerning rental fraud are well known to doctors, and that he sees no problem. He further advised that it "makes me a little concerned about over-aggressive prosecutors taking this report as gospel." Does anyone ever inquire what it costs to maintain the fraud unit, how qualified are the investigators, and what kind of effect fraud accusations have upon the well being of physicians?

The Difference Between The IRS And A Taxidermist, Is That The Taxidermist Leaves The Skin.

Death and taxes - in 1993, $12.6 billion estate tax was collected, but in 1999 that increased to $27.8 billion, far beyond the administration forecast of $20 billion. GOP leaders are pressing for "death tax" relief.

State tax reduction - The strong economy shows that many states are collecting more revenue than budgeted and are planning state tax relief. Unlucky you live Hawaii - no budget surplus here.

Corporate income taxes - In 1966, corporate income tax accounted for 23% of the total, but in 1999 that figure had dropped to 10.1%.

Clinton IRS budget for 2001 - Slick Willie increased the bloated IRS budget of $8 billion by adding $769 million to hire 633 new auditors "for individual returns with over $100,000."

Simplify - All Congresspersons call for a simpler tax code, but it never happens. According to retiring New York Senator Patrick Moynihan, "in the last hours, Congress and the President sign off on a 1200 page monster: We vote for it: nobody knows what is in it." Complexity creates large gray areas allowing IRS agents enormous discretion in interpretation. Anyone for a flat tax?

Why Does A Hearse Horse Snicker Hauling A Tobacco Executive Away?

The Justice Department has a massive civil lawsuit against the tobacco industry seeking to recover billions of dollars the government says it has spent through Medicare and other insurance programs to treat smoking-related illnesses. Defendant attorneys have moved to dismiss the case claiming that the courts have never recognized the right to recover payments made under the Medicare health program except on a case-by-case basis. The government contends that the industry conspired to mislead the public for 45 years about the dangers of tobacco. The Justice Department argues that the case is unique because these corporations for decades deliberately addicted millions of citizens. They argue that the defendants cannot rely on the sheer massiveness of the wrongdoing to cause the suit to be dismissed. Because the law allows the government to go back over decades of ill-gotten profits, the case could amount to more than a hundred billion dollars! Trial is set for 2003.

Just What We Need – Professional Circling Vultures.

Ah, those creative Californians. A new business which is called Home Funeral Ministry, has developed in Sebastobol, California. Supposedly, because baby boomers are now thinking about mortality and are preoccupied with dying a "good death," a growing group of consultants offer a new approach to the end of life. They will provide spiritually fulfilling deaths, stepping in to fill a perceived void not offered by religion, medicine, or the funeral industry. "It's like planning a wedding, or anything else." Courses are being offered to instruct people as professional death companions. Graduates will be called midwives for death or mentors for dying. They offer a sympathetic ear, practical advice, and assurance that they will be there at the end. Perhaps they should produce their own video and partner with the Oregon PBS-TV suicide video (Weathervane March 2000). It's a natural. Plan your own death with choreography! Haysus Cristo, is this nuts or am I?

ADDENDA

- ❖ It is against the law in Rio de Janiero to dance the samba in a tunnel.
- ❖ Veni, vidi, Visa - We came, we saw, we went shopping.
- ❖ No matter how cynical I get, it's impossible to keep up.

Aloha and keep the faith —rts■

www.maximahawaii.com



SASS.
WITH CLASS.

NISSAN

DRIVEN.

New City Nissan - Ala Moana 524-9111 • Tony Nissan - West Oahu 671-2611 (Waipahu) • Tony Nissan - Pearl City 487-1133
Infiniti - Nissan Motor Sales - Honolulu 836-0848 (Airport) • King Windward Nissan - Kaneohe 235-6433
Cutter Nissan of Maui - Kahului 877-9009 • Kauai Nissan - Lihue 245-6731 • Kamaaina Nissan - Hilo 935-3741 • Kona Auto Center - Kona 329-4408



Hawaii medical journal
v. 59
no. 5
May 2000
Received on: 05-17-2000
Brown University Library
SCI

DERMIK

Innovation that makes a **world** of **difference**

Our Mission: To become a global leader in providing innovative dermatological products to patients and healthcare providers.

To learn more, call 1.610.454.8110, or visit our site on the World Wide Web at http://www.dermik.com

Platinum Benefactor

Honor Society

Dermik Laboratories supports research in skin care through a grant to the Dermatology Foundation

DERMIK LABORATORIES, INC.

Dedicated to Dermatology™

A RHÔNE-POULENC RORER COMPANY

HAWAII MEDICAL JOURNAL

I-SIZE
R15
H25x
SCI

June 2000 Volume 59, No. 6 ISSN: 0017-8594



Special Issue on the Third Pacific Vascular Symposium Part III

Stability
Commitment
And a good set of ears

Listening. It's a valuable skill, particularly in today's complex health care arena. To help ensure high-quality care and affordable coverage for our members, HMSA actively seeks out the knowledge and expertise of Hawaii's physician community.

As participants of HMSA and Health Plan Hawaii boards and advisory/liaison committees, hundreds of Hawaii physicians, dentists and other health care professionals provide valuable input regarding medical policy, health plan benefits, quality assurance and other important health care issues. Their efforts have a direct, meaningful impact on HMSA members and the community at large.

Here are the many boards and panels that enable HMSA to make sure that Hawaii's physicians are indeed heard:

HMSA Board and Committees
Board of Directors
Benefits Administration Committee
Fee Review Committee
Medical Review Committee
Quality Oversight Committee

Health Plan Hawaii Board and Committees
Board of Directors
Quality Management Committee

Physician Liaison Committees
Honolulu Physician Liaison Committee
West Oahu Physician Liaison Committee
Windward Oahu Physician Liaison Committee
East Hawaii Physician Liaison Committee
West Hawaii Physician Liaison Committee
Kauai Physician Liaison Committee
Maui Physician Liaison Committee
Vision Liaison Committee

Program Advisory Committees
Asthma Guidelines Advisory Group
Credentialing Committee
Disease Management Physician Advisory Committee
HealthPass Medical Advisory Committee
Pharmacy and Therapeutics Advisory Committee
- Asthma/Allergy Subcommittee
- Cardiology Subcommittee
- Dermatology Subcommittee
- Endocrinology Subcommittee
- Ophthalmology Subcommittee
- Psychiatric Subcommittee

Quality Improvement Committee
WorkComp Hawaii Advisory Committee

For a list of current board and committee physician membership, please call 948-6330 on Oahu or toll-free 1 (800) 790-4672 from the Neighbor Islands.

HMSA and Health Plan Hawaii. Health plans that listen.

HMSA Blue Cross Blue Shield of Hawaii
Choices for a Healthier Hawaii

Health Plan Hawaii
A Federally Qualified HMO Affiliate of HMSA

NCQA Accreditation EXCELLENT
For Commercial HMO

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
Vincent S. Aoki MD, Benjamin W. Berg MD, John Breinich MLS, Satoru Izutsu PhD, James Lumeng MD, Douglas G. Massey MD, Myron E. Shirasu MD, Frank L. Tabrah MD, Alfred D. Morris MD

Journal Staff
Managing Editor: Becky Kendro
Editorial Assistant: Drake Chinen

Officers
President: James Lumeng MD
President-Elect: Philip Hellreich MD
Secretary: Gerald McKenna MD
Treasurer: Paul DeMare MD
Past President: Patricia L. Chinn MD

County Presidents
Hawaii: David Camacho MD
Honolulu: Walter K.W. Young MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Patrick Aiu MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 1999 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 236

Guest Editorial
Bo Eklof MD and Bob Kistner MD 236

Case of the Month
Gauri Radkar DO and Dnane Hospenthal MD, PhD 238

Medical School Hotline
Steven E. Seifried PhD 240

Program for Friday, November 5, 1999, of the Third Pacific Vascular Symposium 242

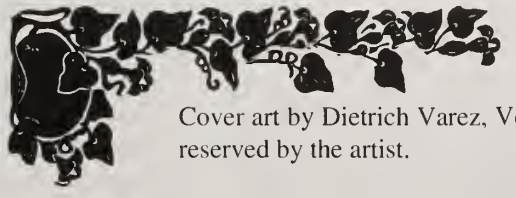
Faculty of the Third Pacific Vascular Symposium 244

Scientific Articles of the Third Pacific Vascular Symposium 246

News and Notes
Henry N. Yokoyama MD 284

Classified Notices 284

Weathervane
Russell T. Stodd MD 286



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

Moana Hotel

Right next door to the Hustace residence, the Moana Hotel opened March 11, 1901 in Waikiki.

Editorial

Norman Goldstein MD
Editor, Hawaii Medical Journal

Pacific Vascular Symposium on Venous Disease – Part III

This is it! This is the third and final issue of the Third Vascular Symposium sponsored by the Straub Foundation. What a special symposium it was, and what a compendium these three Special Issues comprise. Together they represent the most up-to-date information on vascular disease. When you bind them at your local print shop, you will have a current, definitive text on the subject.

Reading the four case presentations, preliminary papers and discussions is like being there on the "Big Island" of Hawaii for the Symposium. Now that the Special Issues on Venous Disease are in print, we can resume publishing general manuscripts. We have many excellent papers backlogged due to special issues. To upcoming authors, thank you for your submissions and your patience.

People know Pueblo for its...



Famous Hot Salsa?

In Pueblo, the free government information is also hot. Spice up your life by dipping into the Consumer Information Center web site, www.pueblo.gsa.gov. You can download all the information right away. Sorry, salsa not available through our web site or Catalog.

U.S. General Services Administration

Guest Editorial

Robert L. Kistner MD
Bo Eklof MD, PhD
Co-Chairmen, The Third Pacific Vascular Symposium

The Third Pacific Vascular Symposium on Venous Disease took place at Mauna Lani Bay Hotel on the Big Island of Hawaii on November 2-6, 1999. The Faculty included more than 40 of the leaders in phlebology, representing 5 continents. The general theme was to contrast aggressive treatment of acute and chronic venous disease with a more conservative approach.

The first day featured a workshop on venous interventions with practical demonstrations of percutaneous interventions for acute and chronic venous disease. The second day focused on treatment and outcomes of DVT. The third and fourth days were devoted to the controversy on management of venous ulcers. The last day of the symposium featured a workshop on treatment of varicose veins and spider veins with practical demonstrations of duplex guided sclerotherapy, lasers and new surgical developments.

In this issue four case presentations were chosen to stimulate discussion by a panel of experts about subjects ranging from simple varicose veins to complex challenging variants of advanced disease. Each case report was preceded by several short presentations that highlighted current thinking on aspects pertinent to the subject matter in the case itself. The case presentations were followed by discussion with an expert panel led by Dr. Thomas O'Donnell, and then by free questions from the audience.

This session was introduced with a presentation titled "Chronic Venous Ulcers" in which Nicos Labropoulis, PhD addressed the importance of accurate and through diagnosis in chronic venous disease to set the tone for the presentations.

Case 1. The first case was one of superficial incompetence. This was preceded by presentations of three methods of handling this problem that included vein preservation techniques, ambulatory surgery, sclerotherapy, and new developments in the field. The case report was followed by a discussion of the case by an expert panel and the audience.

Case 2. The presentation was a case of perforator incompetence. It was preceded by descriptions of surgical and sclerotherapy approaches to treatment of incompetent perforator veins by experts in the field. Following the case presentation, discussion by the expert panel and the audience was led by Dr. Thomas O'Donnell.

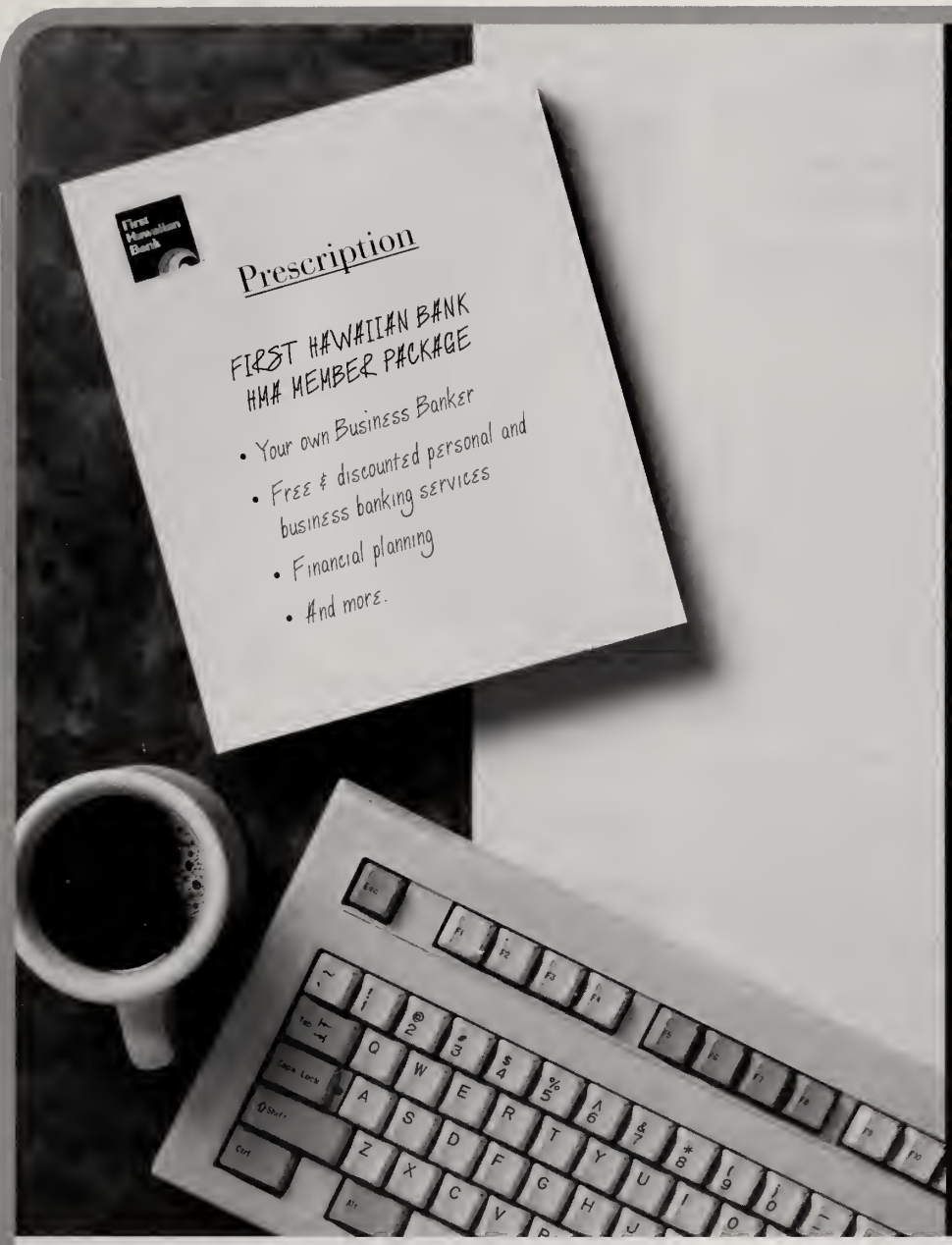
Case 3. This presentation of a case of advanced disease due to primary reflux was preceded by papers describing methods to surgically treat this problem. This case report was followed by a panel discussion and audience comments directed toward the case matter.

Case 4. The fourth case was an example of advanced post-thrombotic changes. The preliminary papers addressed surgical approaches to this entity in both the pelvic and the extremity veins. Following the case presentation, the panel discussed management options and took questions from the audience.

Enjoy this exciting issue of the Hawaii Medical Journal.

Robert L. Kistner, MD
Co-Chairman

Bo Eklof, MD, PhD
Co-Chairman



Your prescription for financial health.

Extra banking benefits for HMA members.

First Hawaiian Bank has the prescription for HMA members. It includes free and discounted personal and business banking services, discounted mortgage loan fees, reduced rates on business loans, free consultation and reduced fees on financial planning, and a Business Banker to help you with it all. It's exactly what you need to keep your finances in excellent health. If you're an HMA member, sign up by calling 525-6262 (or call collect from the neighbor islands).

First Hawaiian Bank®

THE power OF yes.

EQUAL HOUSING LENDER Member FDIC www.fhb.com

Case of the Month

Unusual Presentation of Pulmonary Coccidioidomycosis in a Traveler

Gauri Radkar, DO and Duane Hospenthal, MD, PhD
Department of Medicine
Tripler Army Medical Center

Introduction

The convenience of modern air travel has allowed us accessibility to virtually all parts of the world. Individuals may now be exposed to endemic diseases both where they live and where they travel. The modern physician must include in their differential diagnosis diseases not only endemic to their locale, but also of those places where patients have visited or are traveling from. Coccidioidomycosis is a fungal infection endemic in the southwestern United States, northern Mexico and certain areas of Central and South America. Presentation of coccidioidal disease can range from asymptomatic to disseminated and life-threatening. Symptomatic acute disease occurs in about 40% of patients, lasting a few weeks and resolving without specific therapy. Chronic disease is rare and may be limited to the lung, manifested by cavitary lesions or slow, progressive disease. Our patient was a long-term resident of Arizona who presented with coccidioidomycosis while vacationing in Hawaii. We describe this presentation of coccidioidomycosis in a traveler and long-term resident of Arizona. His presentation was one of persistent pulmonary coccidioidomycosis, an uncommon form of this mycosis.

Case Report

A previously healthy 76 year old Caucasian male vacationing in Hawaii from Arizona presented to our facility with a six week history of documented fever to 103 degrees Farenheit, chills, night sweats, decreased appetite, and a sixteen pound weight loss. He had been on the Island of Oahu for 2 days prior to admission. He was previously treated in Arizona with a ten day course of erythromycin for presumed bacterial bronchitis. His history was also notable for twenty pack years of tobacco use. Physical exam was notable for clear lung fields bilaterally with decreased breath sounds in the right upper lobe and no wheezes. Chest radiograph revealed a patchy right upper lobe infiltrate (Figure 1). Laboratory evaluation revealed a leukocytosis of 17,000 white blood cells (WBC)/FL associated with 74% granulocytes, and eosinophilia of 1400 cells/FL. Computed tomography of the chest revealed extensive airspace consolidation of the right upper lobe with several large bullae and calcified granulomas (Figure 2). Lymph nodes were noted in the right hilar, peritracheal, and subcarinal regions. Sputum cultures recovered *Coccidioides immitis*. Mycobacterial smear and culture of sputum was negative.

Figure 1.– Chest Radiograph

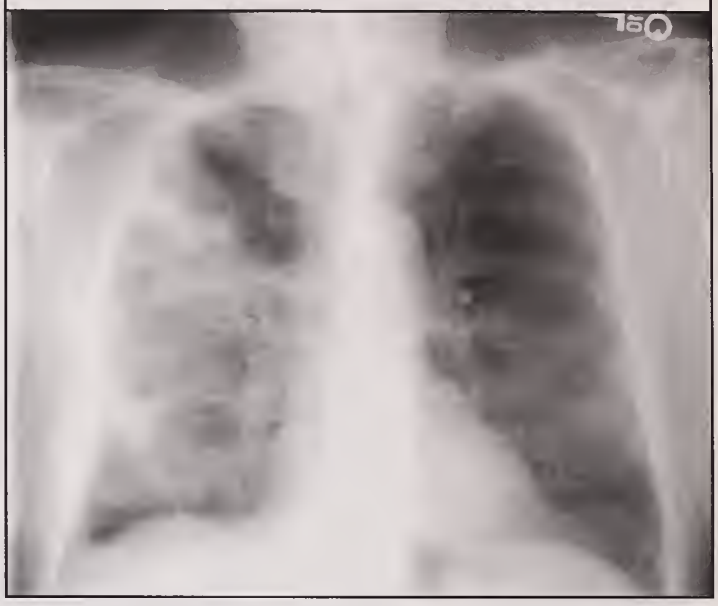
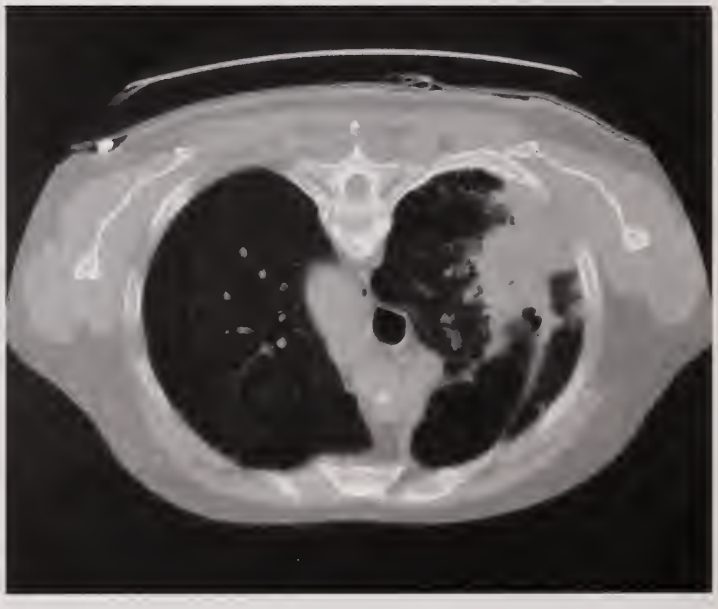


Figure 2.– Chest Computed Tomography



This information led to further evaluation by lumbar puncture. Cerebrospinal fluid (CSF) analysis revealed normal glucose, no WBCs, no organisms on gram stain and fungal smear, and negative *Coccidioides* antibody. Serum *Coccidioides* antibody was positive. The patient was diagnosed with pulmonary coccidioidomycosis with underlying chronic obstructive pulmonary disease (COPD). Therapy with oral fluconazole 400 mg once daily was initiated.

Reprints or correspondence: Dr. Gauri Radkar, Department of Medicine (MCHK-DM), Tripler Army Medical Center, HI 96859-5000

Disclaimer: The views expressed in this manuscript are those of the authors and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

During his six day hospital course, he responded well to this regimen with a defervescence, normalizing leukocytosis and no oxygen requirement. He was discharged home, returning to Arizona several weeks after his hospitalization. He was monitored with serial *Coccidioides* antibody testing. At two months follow up this test became negative. Repeat testing four months later confirmed negative findings and therapy was discontinued. The patient completed six months of treatment and was completely symptom free upon telephonic follow up one month after cessation of therapy.

Discussion

Coccidioidomycosis is most commonly thought of as a disease of Texas, Arizona, and southern California.[1] Presentation of this mycosis outside its endemic area is not unusual, but frequently remains underdiagnosed. An adequate travel history is essential. Primary coccidioidomycosis presents with minimal or absent symptoms in 60% of patients.[2,3] The remaining 40% most frequently present with a febrile pulmonary illness that resembles influenza. Symptoms include nonproductive cough, fever, fatigue, and pleuritic chest pain, a syndrome referred to as "valley fever". Symptoms of dyspnea, arthralgias, myalgias and cutaneous eruptions (including erytherma nodosum and erythema multiforme) have also been noted. Pulmonary infiltrates may be accompanied by hilar adenopathy or pleural effusion. Most cases (95%) of acute infection resolve without therapy. Chronic progressive coccidioidal pneumonia is a less common form of the mycosis that can evolve directly from primary pulmonary coccidioidomycosis or develop years after acquisition of primary infection. Chronic infections tend to be indolent with slow progression of pulmonary destruction but are not likely to disseminate to distant organs. Persistent or recurrent fever in severe primary illness can signal the onset of disseminated diseases. This form may progress rapidly or slowly as bone and joint infection, skin disease, soft tissue abscesses, or meningitis. Meningitis is important to rule out in all infected patients, because untreated, death results in up to 90% of this group of patients.[1]

Our patient's illness does not meet published criteria for acute or chronic infection.[1-4] His presentation is not acute because the duration of symptoms persisted longer than one to three weeks. His disease is not consistent with chronic pulmonary or disseminated infection because typical lung findings or evidence of dissemination were not present. Rather, his presentation is more consistent with persistent pulmonary coccidioidomycosis.[2-4] This syndrome has been reported in small numbers of cases characterized by symptoms of primary infection lasting beyond six weeks. Symptoms include low-grade fever, anorexia, weight loss, cough, and chest pain frequently accompanied by a chest radiograph that fails to show either progression or resolution of abnormalities. This syndrome likely represents a step in the progression of some patients to chronic pulmonary disease. Untreated, this syndrome can be fatal.

Treatment of coccidioidomycosis is seldom indicated in primary pulmonary coccidioidomycosis of mild to moderate severity. Therapy should be considered in patients whose immune status or racial/ethnic background places them at high risk of dissemination. These patient categories include: immunosuppressed patients, diabetics, pregnant women, and black and Filipino males.[5] Treatment is also advised when a primary pulmonary infection is persistent or progressive, as it was in our patient. Effective antifungal agents include amphotericin B and the azole antifungal agents ketoconazole, itraconazole, and fluconazole.[6] Amphotericin B is recommended in patients with life-threatening disease, usually manifested by respiratory compromise, rapid deterioration, or any meningeal involvement. Oral azole agents are often selected for those with chronic processes. There are no comparative studies demonstrating the superiority of one azole antifungal over another, but ketoconazole is the only orally available agent that is approved for this infection.[1] Clinical trials have indicated that fluconazole and itraconazole are both efficacious in moderate and chronic infection. Because of its good penetration into the CSF, fluconazole is life-saving in the chronic treatment of coccidioidal meningitis.

Our patient is interesting in that he presented with an uncommon form of coccidioidomycosis outside of the endemic area. His syndrome did not clearly fit the classic description of either acute or chronic pulmonary coccidioidomycosis, but rather an intermediate syndrome. Previously undiagnosed COPD likely played a role in his protracted pulmonary infection and placed him at risk for chronic infection. The health care provider must take into consideration the patient's origin and travel in forming a differential diagnosis. As demonstrated in this case, inclusion of origin or travels can assist in the diagnosis of both common and rare forms of endemic infections outside of their areas of endemicity.

References

1. Stevens D. Coccidioidomycosis. *New England Journal of Medicine.* 1995, 332(16):1077-1082.
2. Drutz DJ, Catanzaro A. Coccidioidomycosis. part II. Am Rev Respir Dis 1978;117:727-771.
3. Bayer AS. Fungal pneumonias; pulmonary coccidioidal syndromes (part 1). primary and progressive primary coccidioidal pneumonias - diagnostic, therapeutic, and prognostic considerations. Chest 1981;79:575-583.
4. Goldman M, Johnson PC, Sarosi GA. Fungal pneumonias. the endemic mycoses. Clin Chest Med 1999;20:507-519.
5. Galgiani J. *Coccidioides immitis.* In: Mandell GL, Bennett JE, Dolin R, eds. *Mandell, Douglas and Bennett's Principles and Practice of Infectious Diseases. 5th Ed.* Philadelphia: Churchill Livingstone; 2000: 2746-2757.
6. Einstein HE, Johnson RH. Coccidioidomycosis: new aspects of epidemiology and therapy. Clin Infect Dis 1993;16:349-356.

GET IN THE SWIM



MDA
summer camps for
kids are fun and free!

MDA
Muscular Dystrophy Association
1-800-572-1717 • www.mdausa.org

PHOTO PARADE / EDDIE ADAMS

Medical School Hotline

Technology-Based Delivery of PBL Curricular Elements at JABSOM

Steven E. Seifried, PhD
Associate Professor of Physical Biochemistry
Department of Genetics and Molecular Biology
John A. Burns School of Medicine – University of Hawaii

The Internet browser and related technologies are uniquely suited to Problem Based Learning (PBL) curricula. The anytime, anywhere attributes of web-related resources make an especially strong match with the needs of the undergraduate medical student at JABSOM. This article outlines the current philosophy and implementation of web technology-based tools available to students during the first two years of the medical education program[1]. One of several visions of future implementations will be outlined.

The MD Program educational website is faculty-authored and administered. Utilizing UH network ISP services, an in-house NT server is the web presence provider. Faculty and students generate the content. Platform- and browser-independent web pages are designed for a user with modest computing resources, common industry-standard software, and minimal telephone modem Internet service. This enables access by students at home, internet-accessible clinical settings, and on campus. Expensive dedicated telemedicine equipment and high bandwidth access are not required.

Three major roles are played by the current implementation of the website: content delivery, communication, and professional development. The latter role is meant to prepare the student for their future work environment. The students not only need to develop their general computer skills for task tracking, data management, and communication, but they must also be aware of online resources and develop research skills. Importantly, the student must also address ethical issues relating to workplace behavior and computer-accessible patient data.

Communication via the website is currently bi-directional and asynchronous. A public forum is maintained as a venue for open discussion among faculty and students regarding curricular content and process, and any organizational business to be transacted in a class-wide fashion. Administration and faculty post handbooks, schedules, and announcements for use by the students. These functions may also be carried out via e-mail messaging.

A critical communication task is performed by representatives of tutorial groups that process faculty-written health care problems (HCPs). HCPs are the primary driver of the first two years of the JABSOM PBL experience and provide cues or opportunities for the students to generate learning issues (LIs). Routine posting of the group-defined LIs enables the faculty and administration to maintain quality, generate appropriate student assessment tools, and examine the effectiveness of the HCPs. By inspecting the posted LIs from tutorial groups in the current and previous years students simultaneously self-achieve the seemingly disparate goals of reducing student anxiety and maintaining a standard of LI generation that ensures a sufficiently broad scope of content. This is consistent with the philosophy and practice of the learner-centered PBL philosophy as it exits at JABSOM.

The obvious utilization of a website in a PBL curriculum is to deliver content to the student. Images and sounds directly related to the HCP are provided. Multimedia items add richness to the case, provide a closer approximation to a clinical simulation, and serve in direct support of the paper-based exposition of the HCP. These resources are not extensively annotated, and therefore serve the student as additional cues for LI generation.

The JABSOM MD Program curriculum includes learning opportunities other than the HCP and tutorial process. Slides and notes from colloquia and seminars are solicited from presenting faculty for inclusion on the website. Image-intensive pathology lab notebooks of figures and images are available, as are images of the specimens encountered by the students in the laboratory. Public-spirited members of the student body often contribute these latter images. An extensive text and image-laden website is nearing completion that contains the entire syllabus of the introductory anatomy lab. This large resource consists of nearly 1000 linked images and is likely to be translated to CD-ROM, which will obviate the image download wait time.

An upcoming enhancement is a website designed to provide the medical or undergraduate student an interactive and searchable database of research opportunities in the biomedical sciences and public health community. This site will be self-maintained by participating Principle Investigators via browser-based submission forms to a back-end database. A broad invitation and instructions will be forthcoming. Community participation as a student or host site is welcomed.

The JABSOM faculty continues to explore additional appropriate and effective computer and web-based technologies for use in its curriculum. There is great potential, provided technology is balanced by a human component. Students, faculty, and administration must remain engaged at a physical and personal level to ensure quality of process, skills development, and content acquisition. Significant opportunities exist to increase the quality and consistency of the teaching and learning at JABSOM.

The interactive delivery of an integrated HCP over the web has many exciting potentials. Tutorial groups can be exposed to a presentation of a case, complete with supporting multimedia, static images, and lab report forms. Students would be prompted to input prioritized hypotheses and learning issues at appropriate junctures in the case. Optionally, students could subsequently request pre-prepared virtual "online consults" that provide immediate expert feedback on interpretation of images, lab results, and the diagnostic process. This mechanism would allow a consistent presentation of the case for all students without obviating the role of the tutorial group or tutor. Learning issues would still be generated, presented, and integrated into the case by the students with the aid and advice of the tutor. By allowing the technology to assist in the facilitation of process, the tutor is freed to focus on the integration of biological mechanism, clinical skills, and psychosocial issues into the HCP. As the student abilities increase, the linear presentation and group process are reduced; allowing individual sophisticated non-linear processing of HCPs in the more clinical years. These virtual cases

(Continued on Page 284)

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA

Program for Friday, November 5, 1999

Third Pacific Vascular Symposium On Venous Disease November 2-6, 1999

Mauna Lani Bay Hotel & Bungalows • Kohala Coast, Big Island of Hawaii, USA

FRIDAY, NOVEMBER 5, 1999 (MAUNA LANI BALLROOM)

7:00 a.m. CONTINENTAL BREAKFAST/EXHIBITS OPEN

VENOUS ULCER
PART THREE - MANAGEMENT OF THE DECOMPENSATED LEG

7:30 a.m. Moderator: Thomas F. O'Donnell, Jr., MD
Panel: Michael C. Dalsing, MD
Ralph G. DePalma, MD, FACS
Peter Gloviczki, MD
Robert L. Kistner, MD
Michel Perrin, MD
Seshadri Raju, MD

7:45 a.m. VENOUS ULCER AND CEAP
Nicos Labropoulos, PhD, DIC, RVT

The management will be demonstrated by presentation of cases that will illustrate increasing severity of chronic venous disease. Each case will be handled by a group of specialists that will propose diagnostic measures and treatment. Their suggestions will be discussed by the panel and opened up to the audience for wider participation.

8:00 a.m. CASE OF SUPERFICIAL INCOMPETENCE

A 65-year old lady from the Big Island with 5 children developed large varicose veins during her pregnancies. She has had recurrent large ulcerations on her right leg for 30 years and within the last 6 years has developed a painful, circumferential ulceration on the right leg.

Specialists: Gianni Belcaro, MD, PhD (Save the Saphenous Vein)
G. Mark Malouf, MBBS, FRACS, FRC (High Ligation and Stripping)
J. Leonel Villavicencio, MD, FACS (Sclerotherapy)

9:00 a.m. CASE OF PERFORATOR INCOMPETENCE

65-year old woman with large recurrent venous ulcerations on left lower leg. Past history is significant for left GSV ligation and stripping, 1979 and left popliteal and superficial femoral vein DVT, 1989. Laboratory evaluation now shows the following: no significant deep venous obstruction and mild reflux (VFI 3.2 ml/sec) by APG; Duplex scan shows mild recanalization changes of superficial femoral and popliteal veins, no deep reflux and 3 large incompetent perforated veins in the medial aspect of the lower leg.

Specialists: Ralph G. DePalma, MD, FACS (SEPS)
Ermenegildo A. Enrici, MD (Open Perforator Ligation)
Jean-Jerome Guex, MD (Ultra-Sound Guided Sclerotherapy)

10:00 a.m. BREAK/EXHIBITS OPEN

10:30 a.m. CASE OF PRIMARY DEEP VENOUS REFLUX

A 36-year old gentleman from Western Samoa has had recurrent venous ulcerations of both legs that first began when he was 15 years old. He has not been able to work for the past 4 years because of painful, large ulcerations of the right leg.

Specialists: Robert L. Kistner, MD (External Valvuloplasty)
Thomas F. O'Donnell, Jr., MD (Video-Assisted Valvuloplasty)
Michel Perrin, MD (Internal Valvuloplasty)

11:30 a.m. CASE OF SECONDARY DEEP VENOUS DISEASE

47-year old male with disability of the left lower extremity due to post-thrombotic disease. Symptoms and findings of venous claudication, swelling, skin pigmentation, thickening and ulceration of 4 years duration.

Specialists: Seshadri Raju, MD (Something Always Can Be Done)
Michael C. Dalsing, MD (Valve Transplantation)
Peter N. Neglen, MD, PhD (Angioplasty and Stenting)

12:30 p.m. LUNCH (CANOE HOUSE)

1:30 p.m. REVAS
Michel Perrin, MD

2:00 p.m. OUTCOMES EVALUATION
Robert B. Rutherford, MD, FACS, FRCS

2:30 p.m. BREAK/EXHIBITS OPEN

VENOUS ULCER
PART FOUR - QUO VADIS?

3:00 p.m. RESULT OF QUESTIONNAIRE REGARDING DEEP VENOUS RECONSTRUCTION
Tomohiro Ogawa, MD, PhD

3:10 p.m. VALVULOPLASTY AND PRIMARY VENOUS INSUFFICIENCY
Fedor Lurie, MD, PhD

Moderator:	Robert L. Kistner, MD	Thomas F. O'Donnell, Jr., MD
Panel:	Michael C. Dalsing, MD	Michel Perrin, MD
	Ralph G. DePalma, MD, FACS	Seshadri Raju, MD
	Peter Gloviczki, MD	Robert B. Rutherford, MD, FACS, FRCS
	Kenneth A. Myers, MS, FACS,FRCS	D. Eugene Strandness, Jr., MD, DMed(Hon)

5:00 p.m. SCIENTIFIC SESSION ENDS



STRAUB FOUNDATION

1100 Ward Avenue, Suite 1045
Honolulu, HI 96814
Ph: (808) 524-6755
www.straub-foundation.org
Better Health Through Research and Education

Faculty

Peter W. Balkin, MD
Chief of Radiology, Straub Clinic & Hospital, Honolulu, Hawaii, USA

Gianni Belcaro, MD, PhD
Researcher, Cardiovascular Institute, Chieti University, Pescara, Italy
Director Angiology & Vascular Surgery, Pierangeli Clinic, Pescara, Italy

John J. Bergan, MD, FACS, Hon, FRCS(Eng)
Professor of Surgery, University of California Medical School, San Diego, California, USA

Kevin G. Burnand, MBBS, FRCS, MS
Professor of Vascular Surgery, Department of Surgery, St. Thomas' Hospital, London, United Kingdom

Joseph A. Caprini, MD, MS, FACS, RVT
Louis W. Biegler Chair of Surgery, Northwestern University Medical School, Chicago, Illinois, USA
Professor of Bioengineering, Northwestern University, Evanston, Illinois, USA
Director of Surgical Research, Evanston Northwestern Healthcare, Evanston, Illinois, USA

Philip D. Coleridge Smith, DM, MA, FRCS
Senior Lecturer, Department of Surgery, UCL Medical School, London, United Kingdom

Anthony J. Comerota, MD, FACS
Professor of Surgery, Temple University School of Medicine, Philadelphia, Pennsylvania, USA
Chief of Vascular Surgery; Director, Center for Vascular Diseases, Temple University Hospital, Philadelphia, Pennsylvania, USA

Paul R. Cordts, LTC, MC
Clinical Assistant Professor of Surgery, USUHS, USA
Clinical Assistant Professor of Surgery, University of Hawaii, John A. Burns School of Medicine, Honolulu, Hawaii, USA
Vascular Surgeon, Tripler Army Medical Center, Honolulu, Hawaii, USA

Andre Cornu-Thenard, MD
Director of Phlebology Education, Saint Antoine Hospital, Paris, France

Andrew H. Cragg, MD
Clinical Partner, Minneapolis Vascular Institute, Minneapolis, Minnesota, USA
Clinical Professor of Radiology, University of Minnesota, Minneapolis, Minnesota, USA
Interventional Radiologist, Fairview-University Medical Center, Minneapolis, Minnesota, USA

Michael C. Dalsing, MD
Director of Vascular Surgery, Indiana University Medical School, Indianapolis, Indiana, USA

Ralph G. DePalma, MD, FACS
Professor of Surgery, Vice Chair Surgery, Associate Dean, University of Nevada School of Medicine, Reno, Nevada, USA
Chief of Surgery, Reno VAMC, Reno, Nevada, USA

Bo Eklof, MD, PhD
Vascular Surgeon, Straub Clinic & Hospital, Honolulu, Hawaii, USA
Clinical Professor of Surgery, University of Hawaii, John A. Burns School of Medicine, Honolulu, Hawaii, USA
Medical Director, Straub Foundation, Honolulu, Hawaii, USA

Ermenegildo A. Enrici, MD
Chairman, Phleb/Lymph Department, Argentine Catholic University, Buenos Aires, Argentina
Honorary Consultant, Central Military Hospital, Buenos Aires, Argentina
Associate Academic Member, Argentine Academy of Surgeons, Buenos Aires, Argentina

Peter Gloviczki, MD
Chair, Division of Vascular Surgery, Mayo Clinic, Rochester, Minnesota, USA
Professor of Surgery, Mayo Medical School, Rochester, Minnesota, USA

Gabriel Goren, MD
Director, Vein Disorders Center, Encino, CA, USA

J. Jerome Guex, MD
Vice-President, French Society of Phlebology, Nice, France
Treasurer, International Union of Phlebology, Nice, France

Jan Holm, MD
Associate Professor of Surgery, Department of Surgery, Sahlgrenska University Hospital, Goteborg, Sweden

Shunichi Hoshino, MD, PhD
Professor and Chairman, Department of Cardiovascular Surgery, Fukushima Medical University School of Medicine, Fukushima, Japan

Russell D. Hull, MBBS, MSc
Director, Thrombosis Research Unit, Professor of Medicine, University of Calgary, Calgary, Alberta, Canada

Curtis B. Kamida, MD
Radiologist, Straub Clinic & Hospital, Honolulu, Hawaii, USA
Clinical Associate Professor of Radiology, University of Hawaii, John A. Burns School of Medicine, Honolulu, Hawaii, USA

Robert L. Kistner, MD
Vascular Surgeon, Straub Clinic & Hospital, Honolulu, Hawaii,

USA
Clinical Professor of Surgery, University of Hawaii, John A. Burns School of Medicine, Honolulu, Hawaii, USA
President, Straub Foundation, Honolulu, Hawaii, USA

Nicos Labropoulos, PhD, DIC, RVT
Assistant Professor of Surgery, Loyola University Medical Center, Maywood, Illinois, USA
Director of Research, Vascular Diagnostics Ltd., Park Ridge, Illinois, USA
Vascular Consultant, West Suburban Hospital, Oak Park, Illinois, USA

Reginald S.A. Lord, MD
Professor, Department of Surgery, University of Sydney, Sydney, Australia

Fedor Lurie, MD, PhD
Director of Research, Straub Foundation, Honolulu, Hawaii, USA

G. Mark Malouf, MBBS, FRACS, FRCS
Surgeon in Venous Disease, Westmead Hospital, Sydney, Australia
President, Australian and New Zealand Society of Phlebology, Australia

Elna M. Masuda, MD
Vascular Surgeon, Straub Clinic & Hospital, Honolulu, Hawaii, USA
Clinical Assistant Professor of Surgery, University of Hawaii, John A. Burns School of Medicine, Honolulu, Hawaii, USA

Mark Mewissen, MD
Associate Professor, Department of Radiology, Medical College of Wisconsin, Milwaukee, Wisconsin, USA

Gregory L. Moneta, MD
Professor of Surgery, Oregon Health Sciences University, Portland, Oregon, USA

Kenneth A. Myers, MS, FACS, FRACS
Professor, Monash Medical Centre and Epworth Hospital, Melbourne, Australia

Peter Neglen, MD, PhD
Vascular Surgeon, River Oaks Hospital, Jackson, Mississippi, USA

Thomas F. O'Donnell, Jr., MD
President & CEO, New England Medical Center, Boston, Massachusetts, USA
Andrews Professor of Surgery, Tufts University, Boston, Massachusetts, USA

Tomohiro Ogawa, MD, PhD
Cardiovascular Surgeon, Fukushima Medical University School of Medicine, Fukushima, Japan
Visiting Colleague, Department of Surgery, University of Hawaii, John A. Burns School of Medicine, Honolulu, Hawaii, USA
Research Fellow, Straub Foundation, Honolulu, Hawaii, USA

Frank Padberg, Jr., MD, FACS
Professor of Surgery, UMDNJ – New Jersey Medical School, Newark, New Jersey, USA

Hugo Partsch, MD
Professor of Dermatology, University of Vienna, Austria
Head of Dermatological Department, Wilhelminen-Hospital, Vienna, Austria
President, Union Internationale de Phlebologie, Vienna, Austria

Michel Perrin, MD
Associate Professor, University of Grenoble, Grenoble, France

John R. Pfeifer, MD, FACS
Professor of Surgery, University of Michigan School of Medicine, Ann Arbor, Michigan, USA
Director, Division of Venous Disease, University of Michigan School of Medicine, Ann Arbor, Michigan, USA

Seshadri Raju, MD
Emeritus Professor and Honorary Surgeon, University of Mississippi Medical Center, Jackson, Mississippi, USA

Robert B. Rutherford, MD, FACS, FRCS
Professor Emeritus, Department of Surgery, University of Colorado, Silverthorne, Colorado, USA

D. Eugene Strandness, Jr., MD, DMed (Hon)
Professor, University of Washington, Seattle, Washington, USA

David S. Sumner, MD
Distinguished Professor of Surgery, Emeritus; Southern Illinois University School of Medicine, Springfield, Illinois, USA
President, American Venous Forum, USA

Patricia E. Thorpe, MD
Associate Professor of Radiology/Surgery, Creighton University Medical Center, Omaha, Nebraska, USA

J. Leonel Villavicencio, MD, FACS
Professor of Surgery, Department of Surgery, Uniformed Services University of the Health Sciences, Bethesda, Maryland, USA
Senior Consultant, Department of Surgery and Director of Venous and Lymphatic Teaching Clinics, Walter Reed Army Medical Center, Washington, DC, USA and Naval Medical Center, Bethesda, Maryland, USA

Thomas W. Wakefield, MD
Professor of Surgery, Section of Vascular Surgery, University of Michigan Medical Center, Ann Arbor, Michigan, USA

Robert A. Weiss, MD
Assistant Professor, Department of Dermatology, Johns Hopkins University School of Medicine, Baltimore, Maryland, USA

CHRONIC VENOUS ULCERS

Nicos Labropoulos, PhD, DIC, RVT
Loyola University Medical Center
Maywood, Illinois, USA
A.K. Tassiopoulos, MD

The prevalence of lower extremity ulceration secondary to chronic venous disease (CVD) in European and Western populations is estimated to be 0.5% to 1%.[1,2] Approximately 12% to 14% of patients with CVD in recent series[3,4] have venous ulcers (clinical classes C_5 and C_6). Despite the high prevalence and the significant morbidity of this problem, it has always been relatively neglected. Even currently, many patients are offered conservative management only. Duplex ultrasound examination of the lower extremity veins was introduced in recent years and significantly improved our understanding of the etiology of CVD. Moreover, this non-invasive test has allowed precise identification of the malfunctioning vein segments and has contributed to a more rational therapeutic approach that targets the affected venous segment.

The main mechanisms responsible for venous ulcers are reflux, venous outflow obstruction, or a combination of the two. Reflux is the most common cause of CVD and is seen in the vast majority of limbs with ulcers. Combined reflux and obstruction is more often seen in limbs belonging to classes C_4 to C_6.[3] A recent prospective study demonstrated that a combination of reflux and obstruction had worst prognosis for developing limb ulceration compared to reflux or obstruction alone (odds ratio 3.5, 95% CI 1.4-8.6).[5]

In contrast to what was previously thought, a documented episode of DVT is only seen in 33%-50%[6-10] of patients with ulceration and this prevalence is higher than in any other CVD class.[11] This prevalence is probably underestimated because many thrombi remain undetected and may resolve without leaving any evidence of luminal damage other than reflux due to destruction of the valves.

The efficiency of calf muscle pump and amount of reflux are also associated with the development of ulceration. Nicolaides, et al, in a study of 220 unselected patients with CVD demonstrated that the prevalence of ulceration increased with higher ambulatory venous pressures.[12] The calf muscle function in terms of strength (peak torque/body weight) and endurance (total work) of patients with recently healed venous ulcers were significantly reduced compared to age- and sex-matched healthy subjects (p=0.049, 95%CI 0.3-18.4% and p=0.05, 95%CI 6.01-97.6 Nm respectively).[13] It has also been shown that patients with ulceration had worst ejection fraction compared to patients with varicose veins only.[14] However, in another study where the patients were matched for age and duration of disease, the amount of reflux was the most significant factor for the severity of CVD.[15]

Several studies have shown that the site and extent of reflux are important determinants for the severity of CVD and the development of ulceration. The greater saphenous vein is most often involved from the superficial veins. In fact, reflux involving both the above and below knee segments of this veins is the most common pattern of reflux in patients with ulceration.[7,9,16] Reflux in the lesser saphenous vein alone rarely causes ulcers unless it is combined with reflux in the greater saphenous and/or the deep veins.[16,17] The more deep veins involved the higher the prevalence of ulceration. However, among all deep veins, reflux in the popliteal vein has been shown to be very significant for ulcer development and it is also a predictor for poor healing.[17-20]

Most recent studies have shown that reflux in the superficial system is seen in 79%-93% of limbs with ulceration.[3,7-10] Reflux confined to the superficial veins alone is responsible for 17% to 54% of venous ulcers[3,6-9] whereas deep venous reflux alone accounts for 2.1% to 15%.[4,6,9,15] The prevalence of deep venous reflux in patients with venous ulcers ranges between 50% and 70% in various reports.[3,7-9,11] Most patients with ulcers (52%-70%) have incompetence in more than one system[7-9,21] and reflux in all three venous systems is seen in 16%-50%.[3,7-9,15,21]

When venous ulceration is due to superficial and perforator incompetence, surgical treatment may heal up to 90% of the ulcers with very good medium to long term results.[22,23] About 30-50% of patients with ulcers belong to this category.[6-9] Superficial vein ligation and/or stripping has worst results, with very high recurrence rates at 5 years, when there is reflux in the deep venous system.[23] In these patients additional procedures that are designed to improve the underlying abnormality may be required, and several studies have shown encouraging results.[24-27]

The significance of incompetent perforating veins remains controversial. Some investigators reported that incompetent perforators do not contribute to venous hypertension,[28-30] whereas others suggest that they are important.[9,10,31-33] Some recent reports have shown that subfascial ligation of these veins, combined with ligation and/or stripping of the superficial incompetent veins, is associated with high rates of ulcer healing and improved disease free intervals.[32,33]

A detailed study of the ulcerated lower extremity that will identify the etiology and outline the anatomic distribution of CVD is necessary prior to planning a surgical intervention in order to achieve the best outcome.

References

1. Cornwall JV, Lewis JD. Leg ulcer revisited, *Br J Surg.* 1983;70:681.
2. Callam MJ, Ruckley CV, Harper DR, Dale JJ. Chronic ulceration of the leg: Extent of the problem and provision of care, *Br Med J.* 1985; 290:1855-1856.
3. Kistner RL, Eklof B, Masuda EM. Diagnosis of chronic venous disease of the lower extremities: The "CEAP" classification, *Mayo Clin Proc.* 1996;71:338-345.
4. Labropoulos N. CEAP in clinical practice, *Vasc Surg.* 1997;31:224-225.
5. Johnson BF, Manzo RA, Bergelin RO, Strandness DE Jr. Relationship between changes in the deep venous system and the development of the post-thrombotic syndrome after an acute episode of lower limb deep vein thrombosis: a one- to six-year follow-up, *J Vasc Surg.* 1995;21: 307-312.
6. Shami SK, Sarin S, Cheatle TR, Scurr JH, Coleridge Smith PD. Venous ulcers and the superficial venous system, *J Vasc Surg.* 1993; 17:487-490.
7. Labropoulos N, Leon M, Geroulakos G, Volteas N, Chan P, Nicolaides AN. Venous hemodynamic abnormalities in patients with leg ulceration, *Am J Surg.* 1995;169:572-574.
8. Labropoulos N, Giannnoukas AD, Nicolaides AN, Ramaswami G, Leon M, Burke P. New insights into the pathophysiologic condition of venous ulceration with color-flow duplex imaging: Implications for treatment? *J Vasc Surg.* 1995;22:45-50.
9. Hanrahan LM, Araki CT, Rodriguez AA, Kechejian GJ, LaMorte WW, Menzoian JO. Distribution of valvular incompetence in patients with venous stasis ulceration, *J Vasc Surg.* 1991;3:805-812.
10. Labropoulos N, Delis K, Nicolaides AN, Leon M, Ramaswami G, Volteas N. The role of the distribution and anatomic extent of reflux in the development of signs and symptoms in chronic venous insufficiency, *J Vasc Surg.* 1996; 23:504-510.
11. Labropoulos N. Clinical correlation to various patterns of reflux, *Vasc Surg.* 1997;31:242-248.
12. Nicolaides AN, Hussein MK, Szendro G, Christopoulos D, Vasdekis S, Clarke H. The relation of venous ulceration with ambulatory venous pressure measurements, *J Vasc Surg.* 1993; 17:414-419.
13. Yang D, Vandongen YK, Stacey MC. Changes in calf muscle function in chronic venous disease, *Cardiovasc Surg.* 1999;7:451-456.
14. Christopoulos D, Nicolaides AN, Cook A, Irvine A, Galloway JM, Wilkinson A. Pathogenesis of venous ulceration in relation to the calf muscle pump function, *Surgery.* 1989;106:829-835.
15. Labropoulos N, Giannoukas AD, Nicolaides AN, Veller M, Leon M, Volteas N. The role of venous reflux and calf muscle pump function in nonthrombotic chronic venous insufficiency. Correlation with severity of signs and symptoms, *Arch Surg.* 1996;131:403-406.
16. Labropoulos N, Leon M, Nicolaides AN, Giannnoukas AD, Volteas N, Chan P. Superficial venous insufficiency: Correlation of anatomic extent of reflux with clinical symptoms and signs, *J Vasc Surg.* 1994;20:953-958.
17. Payne SP, London NJ, Newland CJ, Bell PR, Barrie WW. Investigation and significance of short saphenous vein incompetence, *Ann R Coll Surg Engl.* 1993;75:354-357.

18. Shull KC, Nicolaides AN, Fernandes e Fernandes J. Significance of popliteal reflux in relation to ambulatory venous pressure and ulceration, *Arch Surg.* 1979;114: 1304-1306.
19. Nash TP. Venous ulceration: factors influencing recurrence after standard surgical procedures, *Med J Aust.* 1991;154:48-50.
20. Brittenden J, Bradbury AW, Allan PL, Prescott RJ, Harper DR, Ruckley CV. Popliteal vein reflux reduces the healing of chronic venous ulcer, *Br J Surg.* 1998;85: 60-62.
21. Yamaki T, Nozaki M, Sasaki K. Color duplex ultrasound in the assessment of primary venous leg ulceration, *Dermatol Surg.* 1998; 24:1124-1128.
22. Darke SG, Penfold CAD. Venous ulceration and saphenous ligation, *Eur J Vasc Surg.* 1992;6:4-9.
23. Burnand KG, Thomas ML, O'Donnell TF Jr., Browse NL. Relation between postphlebitic chan-ges in the deep veins and results of surgical treatment of venous ulcers, *Lancet.*1976;1:936-938.
24. Masuda EM, Kistner RL. Long-term results of venous valve reconstruction: A four- to twenty-one-year follow-up, *J Vasc Surg.* 1994;
19:391-403.
25. Kistner RL, Eklof B, Masuda EM. Deep venous valve reconstruction, *Cardiovasc Surg.* 1995;3:129-140.
26. Raju S, Neglen P, Doolittle J, Meydrech EF. Axillary vein transfer in trabeculated post-thrombotic veins, *J Vasc Surg.* 1999;29:1050-1064.
27. Juhan CM, Alimi YS, Barthelemy PJ, Fabre DF, Riviere CS. Late results of iliofemoral venous thrombectomy, *J Vasc Surg.* 1997; 25:417-422.
28. Burnand KG, O'Donnell TF Jr., Thomas ML, Browse NL. The relative importance of incompetent communicating veins in the production of varicose veins and venous ulcers, *Surgery.* 1977;82:9-14.
29. Bjordal R. Flow and pressure studies in venous insufficiency, *Acta Chir Scand Suppl.* 1988;544:30-33.
30. Stacey MC, Burnand KG, Layer GT, Pattison M. Calf pump function in patients with healed venous ulcers is not improved by surgery to the communicating veins or by elastic stockings, *Br J Surg.* 1988;75:436-439.
31. Zukowski AJ, Nicolaides AN, Szendro G. Haemodynamic significance of incompetent calf perforating veins, *Br J Surg.* 1991;78:625-629.
32. Gloviczki P, Bergan JJ, Rhodes JM, Canton LG, Harmsen S, Ilstrup DM. Mid-term results of endoscopic perforator vein interruption for chronic venous insufficiency: Lessons learned from the North American subfascial endoscopic perforator surgery registry. The North American Study Group, *J Vasc Surg.* 1999;29:489-502.
33. Pierik EG, van Urk H, Wittens CH. Efficacy of subfascial endoscopy in eradicating perforating veins of the lower leg and its relation with venous ulcer healing, *J Vasc Surg.* 1997;26:255-259.

I. PRIMARY VENOUS DISEASE: SUPERFICIAL INCOMPETENCE

SAVING THE SAPHENOUS VEIN

Gianni Belcaro, MD, PhD
Chieti University
Pescara, Italy

The extent of the problem. Pure, superficial, primary venous incompetence[15] may be present (without large varicosities) for several years as a preliminary, subclinical stage. The incompetence of the SFJ and of the LSF (documented by color duplex in the San Valentino epidemiological study, 20,000 patients, 10-year follow-up) may be present in some 9% of subjects ages 45 to 65[16] and simple, uncomplicated varicose veins varicose in some 6% of asymptomatic subjects of an European population. However, only a part of these subjects will be referred for diagnosis and treatment. The total absence of valves in the superficial venous system is a rare occurrence (i.e. never verified in the 20,000 subjects of the San Valentino study). Therefore most subjects (70%) with simple incompetence of the SFJ could theoretically be treated with selective correction of incompetence.

Surgery. Repair of incompetent femoral vein valves in subjects with primary valve incompetence has been developed by Kistner in 1968.[1] The original method involved a venotomy in the femoral vein with placement of sutures to shorten the vein cusps under direct vision. Variations of open valve repair have been reported by others.[2,3,4,5] More recently closed valvuloplasty has been developed by Kistner.[4] Variations of external valvuloplasty including the use of intraoperative angioscopy to visualise the effects of the external valvuloplasty has been developed by Gloviczki at the Mayo Clinic.[5] All these techniques were aimed to treat deep venous system problems. The surgical method involves complete dissection of the femoral vein for 4 to 10 cm in order to place sutures on both sides of the vein wall at the level of the valves commissures. A progressive dilatation of the femoral vein after months has been observed in some subjects and this has led to the placement of several types of nets or vein cuffs in order to contain such dilatation and keep the valve competent.[2,6] The progressive dilatation of the vein – causing recurrence of incompetence - may be possibly due to the dissection of the vein wall with destruction of vasa vasorum supply and innervation. The superficial venous system, when initially incompetent, has been also treated with external valvuloplasty with initial (6-8 months)[7,8] and long term (> 10 years) satisfactory results. The first randomized study on superficial veins valvuloplasty (long saphenous vein) was initiated in 1986 by our group and appeared for the first time in the medical literature 1989. Therefore the idea of treating in a conservative way the LSV and the relative surgical method are relatively new. In the same period a conservative way of treating superficial venous incompetence based on information given by color duplex (which became available for venous evaluation in that period) were developed[9,10] and documented by long-term (5 years) randomized, controlled studies. The randomized, controlled study on the correction of superficial venous incompetence using SFJ valvuloplasty and selective LSV repair indicated a very important potential application of non-destructive superficial venous surgery.[11] In this period external valvuloplasty was also attempted in a limited number of patients with superficial venous incompetence, dilated but not varicose veins.[12] A randomized pilot study was also conducted using an external Gore-tex patch applied in tubular shape at the proximal part of the SFJ.[12] The control treatment was simple, proximal ligation of the SFJ. No complications were observed in all 28 cases treated. Complete correction of venous incompetence was achieved in 21 cases and partial correction in 5. Competence persisting was still present after 6 years. Also no significant reaction to the Gore-tex patch or infection were observed in the following 6 years.

In the following years a few reports have indicated that external valvuloplasty of the deep venous system too are effective in reducing and controlling both superficial and venous incompetence[13,14] even in protracted follow-up (>3 years).

Data on file from our group (the study is still in progress with the aim to achieve 20-year follow-up before review of data) indicate that long-lasting, effective competence of the superficial and deep venous systems may be achieved both after external valvuloplasty or by placing an external vein support (i.e. Gore-tex patch or tubular graft cut and sutured according to the vein shape) systems. However, longer studies are needed to confirm the possibilities, limits and potential clinical applications of non-destructive venous surgery.

References

1. Kistner RL. Surgical repair of a venous valve, *Straub Clin Proc.* 1968;24:41-3.
2. Raju S, Fredericks R. Valve reconstruction procedures for non-obstructive venous insufficiency: rationals, techinques and results in 107 procedures with two- to eight-year follow-up, *J Vasc Surg.* 1988; 7:301-10.
3. Sottiurai VS. Technique in direct venous valvuloplasty, *J Vasc Surg.* 1988;8:646-8.
4. Kistner RL. Surgical technique of external venous valve repair, *Straub Found Proc.* 1990;55:15-6.
5. Gloviczki P, Merrel SW, Bower TC. Femoral vein valve repair under direct vision without venotomy: a modified technique with use of angioscopy, *J Vasc Surg.* 1991;14: 645-8.

6. Lane RJ. Repair of venous valves using silicone cuffs In: Greenhalgh RM. Ed. *Vascular Surgical Techniques: an atlas (2nd edition).* Philadelphia, PA:WB Sanders; 1989:410-7.
7. Belcaro G. Plication of the sapheno-femoral junction. An alternative to ligation? *Acta Chir Belgica.* 1989; 89:305-308.
8. Belcaro G. Plication of the sapheno-femoral junction. An alternative to ligation and stripping? *Vasa.* 1989; 18:296-300.
9. Belcaro G, Christopoulos D, Vasdekis S. Treatment of superficial venous incompetence with the SAVAS technique, *J Mal Vasc.* 1991;16:23-7.
10. Belcaro G, Errichi BM. Selective Saphenous vein repair: a 5-year follow-up study, *Phlebology.* 1992; 7:121-24.
11. Belcaro G. Correction of superficial incompetence with selective saphenous vein repair (SSVR). A five-year follow-up study, *Vasc Surg.* 1993;122-27.
12. Belcaro G, Christopoulos D, Vasdekis S, Errichi BM. Correction of superficial venous incompetence with an external Gore-tex patch applied at the sapheno-femoral junction. A randomised study vs. ligation of the junction. (data on file). Manuscript in press.
13. Belcaro G. Femoral vein valve repair with limited anterior plication (LAP), *J Cardiovasc Surg.* 1993;34:395-8.
14. Belcaro G, Ricci A, Laurora G, Cesarone MR, De Sanctis MT, Incandela L. Superficial femoral vein valve repair with limited anterior plication, *Phlebology.* 1994; 146-149.
15. Belcaro G, Nicolaides AN, Veller M. *Venous Disorders, A manual of diagnosis and treatment.* London: Sanders, 1996.
16. Cesarone MR, Belcaro G, Nicolaides AN, Laurora G. De Sanctis MT, Incandela L, Barsotti A. Epidemiology and costs of venous disease in central Italy. The San Valentino venous disease project, *Angiol.* 1997;48:583-592.
17. Belcaro G, Christopoulos D, Nicolaides AN. Venous insufficiency: noninvasive testing. In: Bergan JJ, Kistner RL, eds. *Atlas of Venous Surgery.* Philadelphia, PA:WB Saunders; 1992:9-24.

Table: WHY TO SAVE THE LONG SAPHENOUS VEIN?

1. In case of DVT less complications (edema, ulcerations, etc.)
2. No obstruction (outflow is better saving the vein)
3. The vein may be useful as a graft
4. Lower costs
5. Noninvasive tests tell you precise sites of incompetence. You do not need to destroy the whole vein.
6. It is physiologically better to correct incompetence more than system destruction.
7. To save the integration between the deep and superficial system (which is a single, composite system) is important for long term outcome.

AMBULATORY VENOUS SURGERY VERSUS SCLEROTHERAPY

G. Mark Malouf, FRACS
Westmead Hospital
Sydney, Australia

Great advances have occurred in recent years in venous surgery that have allowed us to perform a walk-in walk-out type of surgery now called ambulatory vein surgery. The development of this type of surgery is at different levels throughout the world and has doctors of different specialties involved in it, including physicians, surgeons and sclerotherapists.

Sclerotherapy over the last few years has also made tremendous advances principally more and/or better solutions or sclerosants available in various countries, more research into the scientific basis for sclerotherapy, better or more convenient methods of compression, and better placement of needles into veins using duplex ultrasound.

When comparing and contrasting these two methods of treating varicose veins I think we have to compare ideal ambulatory venous surgery done with good anaesthesia, minimal access incisions, hook phlebectomy, and compression, with ideal sclerotherapy using what we think is the best sclerosant, of course using the best techniques and achieving good compression for an adequate period of time with minimal patient discomfort. Both of these techniques therefore will produce good results and hopefully the best possible result.

In years past, surgeons performed traditional major varicose vein surgery in hospital and this was quite an ordeal for the patient. Surgeons soon learned that less radical, better tailored operations using new techniques of minimal access would enable the patient to be out of hospital quicker and back to work earlier with far less morbidity. This progressed to the use of local anaesthesia and hook phlebectomy, so that a lot of this surgery is now done in the rooms.

Traditional European sclerotherapists held a strong view that all types of varicose veins could simply be treated by repeated and extensive courses of sclerotherapy. The dedicated sclerotherapists are divided in their opinion as to the wisdom of this approach. Many have seen the wisdom of surgical removal of large varicose veins, which produced a more effective and long lasting result and with the advent of hook phlebectomy followed by compression sclerotherapy, better and more long lasting results were produced. Some sclerotherapists, however, armed with duplex scanning for placement of needles in bigger and bigger veins, have been seduced into believing that injection of large volumes of high concentration sclerosants into the saphenous trunks would produce just as effective a result as surgical removal of the vein. This has prompted a push in some sections for routine ultrasound guided placement of needles and sclerotherapy for even the most major of varicose veins cases.

Ambulatory venous surgery can be done under general anaesthesia, in a day surgery centre or licensed operating room. The patient is in "hospital" usually for about four hours, there is no restriction on the extent of vein surgery performed, including high ligation of the long saphenous or short saphenous veins, stripping, ligation of perforators and multiple phlebectomy. This is still the recommended treatment by surgeons, particularly vein surgeons, in patients suffering from major upstream incompetence. Ambulatory venous surgery under local anaesthesia can be performed in an office setting, either in your consulting room or procedures room. This would basically involve multiple small stabs along the leg and hook phlebectomy of segments of the saphenous trunks, large saphenous tributaries or large reticular veins. It would not involve saphenofemoral or saphenopopliteal ligation or stripping. This is the major form of ambulatory venous surgery that I wish to compare with sclerotherapy.

If the good quality venous incompetence duplex scan that you have ordered or performed on your varicose veins patient shows major upstream incompetence I still believe that the four hours in hospital, general anaesthesia, doing as much as you can to remove those veins surgically, with the patient going home later on that day, but perhaps having some days off work is the best way to proceed in our Australian medical environment. If a patient presents, however, with segmental saphenous vein incompetence, saphenous tributary disease, or with early residual or recurrent varicose veins then the office setting under local anaesthesia is ideal for removing the raised palpable veins and then following this up with sclerotherapy for what is left. This procedure under local anaesthetic is ideal for raised tributaries over bony prominences, such as over the patella or the front of the shin or ankle, or across flexures such as in the popliteal fossa, or for more proximal veins high on the thigh.

Let us now turn to ideal sclerotherapy. There is no doubt that

compression sclerotherapy is suitable for tributaries of the saphenous vein, reticular veins, venules and telangiectasias. When it is performed on large saphenous tributaries and even incompetent saphenous trunks, it is effective at reducing the size and the symptoms of these veins. By itself it is unlikely to control major trunkal incompetence long-term. Sclerotherapists have used improved diagnostic imaging with duplex scanning to improve the placement of their needles under ultrasound control. In so doing, they are canulating bigger and bigger vessels, but they still need large volumes of high concentration sclerosant to effectively do any damage, mostly thrombosis possibly sclerosis, to these large vessels. I am speaking specifically here of the long saphenous and short saphenous trunks. This technique of ultrasound guided sclerotherapy, particularly to the saphenofemoral junction manages to temporarily occlude or cork this junction, taking the pressure off the varicosities distally. Subsequent sclerotherapy to large veins distally when the pressure is reduced will have a beneficial effect. On some available data, the recanalisation rate of the long saphenous vein at two years is over 40% and so the veins begin to re-open even in the best of hands and the process has to be repeated. It is my strong contention that these major trunks are best dealt with surgically, with high ligation and limited stripping, and at the same time surgically removing the larger varicosities, and thus saving the sclerotherapy for residual and recurrent veins.

Ideal sclerotherapy must use what you regard as the ideal solution. In Australia from 1991 to 1995 we performed an open clinical trial in an effort to introduce aethoxysklerol into the country, comparing it with the two established solutions of sodium tetradecyl sulphate and hypertonic saline (20%). The trial included 120 doctors who were experienced injectors, and a series of 34,878 legs that were injected, 40% principally for varicose veins, and 60% for surface or spider veins. The results of that trial showed most injectors to believe that aethoxysklerol had a better efficacy than the established solutions, was much less painful for the patient on injection, produced less frequent and less severe injection ulcers, pigmentation and phlebitis. The clinical occurrence of deep vein thrombosis in that trial was one leg in 7,000 injected. This has lead a large proportion of Australian doctors performing sclerotherapy to chose aethoxysklerol as their preferred or best sclerosant.

We must of course compare potential complications of the two forms of treatment that we are discussing. With minimal access technique the scarring with hook phlebectomy is indeed minimal. Trauma to cutaneous nerves and subcutaneous lymphatics is certainly possible but rare and with experience of this technique can be avoided. When looking at sclerotherapy, even using one's ideal solution, the problem of retained blood in the vein, thromboembolism, toxicity of the sclerosant, telangiectatic matting and injection ulceration remain possible, but again with a low incidence.

As individual doctors practising on their patients daily, we encounter many variables that go into our decision to advise the patient to have one treatment or the other. As far as the treating doctor is concerned, he may have very little time available and it is obvious that the surgical removal of veins takes longer, but he is rewarded proportionally to his time expended and so the cost is higher. If he is a sclerotherapist or physician who is not used to actually making incisions and pulling things out then this may influence him towards sclerotherapy, but if he is a surgeon who finds hook phlebectomy quick, easy and satisfying then this direction may be followed. The doctor's access to facilities and equipment is also a vital factor. The patient also presents variables in the eventual decision and sometimes they demand one way and one way only to be treated. The level of financial remuneration governed by their level of medical insurance is also going to be a factor, but what is a very important clinical factor is the site of the veins on the legs and over any difficult site surgical excision of raised palpable veins in my opinion does a lot better than sclerotherapy.

And so ambulatory venous surgery can be used on saphenous trunks, major saphenous tributaries and large reticular veins. It is more time consuming than sclerotherapy, but one treatment is all that is required to remove the particular vein. Compression following ambulatory venous surgery need only be for 48 hours and there is a very low medium term recurrence rate with very good patient satisfaction. Pigmentation, ulceration and phlebitis do not occur after this technique. Sclerotherapy, looking at the same parameters, can be used on large and small veins alike from saphenous trunks all the way down to telangiectasias. It is a much quicker technique to perform than ambulatory venous surgery, but often requires multiple treatments and longer compression, depending on the size of the vein, up to six weeks. There is a variable medium term recurrence rate and variable patient satisfaction. When high volumes of high concentration sclerosant are used this has more chance of leading to pigmentation, ulceration or phlebitis.

In summary it is my contention that using the best available minimally invasive ambulatory venous surgery for the larger vessels that are raised and easily removed should then be followed by sclerotherapy, using the best sclerosant available to you, and I consider that to be aethoxysklerol. This will yield your best results. Ambulatory venous surgery versus sclerotherapy therefore should now read ambulatory venous surgery followed by sclerotherapy for best results.

NEW TRENDS AND OPERATIVE TECHNIQUES IN THE MANAGEMENT OF VARICOSE VEINS

J. Leonel Villavicencio, MD, FACS
Uniformed Services
University of the Health Sciences
Bethesda, Maryland, USA

The advances in noninvasive diagnostic vascular technology have allowed us to study with accuracy the anatomy and pathophysiology of the venous system. With the use of the bi-directional Doppler, color-flow duplex scanner, and air plethysmography, we can investigate the venous pathology in a very precise manner and plan the appropriate treatment. As a result of these technological advances, we have learned that the main trunk of the saphenous vein may be quite healthy despite the presence of large clusters of varicose veins in one or more of its tributaries. Sparing a healthy saphenous trunk has become of importance for two main reasons: the first reason is that it makes no sense to excise a healthy organ that is performing its assigned function in a satisfactory manner.[1] The second reason is that the saphenous vein is the most important autogenous conduit utilized as bypass, patch, or substitute in the arterial system.

Despite these reasons, surgery for primary varicose veins with preservation of the saphenous trunk is controversial. There are several published reports that support sparing the saphenous vein. Large[1] studied 202 patients in whom he performed stab avulsion and proximal ligation only in cases of sapheno-femoral incompetence (51.5%). There was a 10.5% recurrence rate at three years. Hanrahan, et al,[2] performed duplex examination of 54 lower extremities with varicose veins. Seventy-two percent of these patients manifested branch incompetence alone. The relationship of incompetence of the sapheno-femoral junction to the presence of superficial varices was inconsistent. Deep venous incompetence was present in 41% of the extremities. These data support the position that the preoperative assessment of reflux in vein segments is more appropriate than routine stripping of the main trunk or ligation of the sapheno-femoral junction. Koyano and Sakaguchi[3] studied 337 legs of 208 patients using Doppler and calf compression-release. They found that 66% of these patients had incompetence of the long saphenous vein. They were able to demonstrate reflux in segments of the saphenous vein. Based on Doppler findings, they performed selective stripping in 80 limbs in which only the segments with venous reverse flow were selectively removed. Their follow-up studies showed that selective stripping operations were as satisfactory as those in which the standard stripping operation was carried out (189 limbs). Additionally, the incidence of saphenous neuritis was 4.8% in patients with selective stripping versus 27% in patients submitted to full stripping.

Other studies have challenged the preservation of the saphenous vein. Munn, et al,[4] reported that routine greater saphenous vein stripping had a lower incidence of recurrent varicosities (18%) than was seen in patients in whom the saphenous vein was preserved (29% recurrence). Of interest, however, was the finding that the patients were more satisfied with the results of the leg that was not stripped. This was the result of a high incidence of nerve injuries in the legs which had full stripping.

Sutton and Darke[5] performed peri-operative retrograde saphenography to study 80 incompetent long saphenous veins in 60 patients with primary varicose veins. They found that there were varicose changes in 65% of the greater saphenous veins and stated that the incompetent vein did not appear to be a suitable arterial replacement. They concluded that insufficiency of the saphenous valves may contribute to the development of venous ulceration. In these studies, Hunterian perforators of variable size were seen on 70 saphenograms (87%) and these investigators concluded that stripping of the incompetent greater saphenous vein would certainly disconnect such perforators and reduce the incidence of both recurrent varicose veins and persistent ulceration. The diagnosis of saphenous incompetence was performed with Doppler and Valsalva maneuver and confirmed by intra-operative phlebography.

MacFarlane, et al[6] performed phlebography in 35 extremities that were going to be operated on for varicose veins. They demonstrated that the segment of saphenous vein below the knee does not undergo varicose dilatation. In seven of nine patients examined post-operatively, the segment remained patent after the vein above had been stripped. Additionally, 75% of the greater saphenous veins above the knee were not dilated or tortuous. These authors concluded that varicose veins resulting from sapheno-femoral incompetence can be treated surgically by stripping the long saphenous vein only to the knee and yet still leave a non-varicose segment for possible future utilization. In 75% of their cases, the greater saphenous vein above the knee was incompetent, but not grossly dilated or tortuous. In the remaining 25%, the above knee portion was severely diseased and would have been unsuitable for any form of bypass grafting.

McMullin, et al,[7] studied 54 limbs with duplex scanning before high ligation and multiple avulsion of primary varicose veins. Duplex scanning confirmed sapheno-femoral incompetence and excluded short saphenous incompetence. Of interest is that in 24 of the 52 limbs in which the junction had been ligated, there was persistent reflux down the long saphenous vein. In only two limbs was this reflux attributable to mid-thigh perforating veins. Photoplethysmography was performed before and after surgery and the venous refilling time measured. Using this method to evaluate results, the authors concluded that high ligation without stripping fails to control significant reflux within the long saphenous vein in a high proportion of cases. However, van Bemmelen and Strandness,[8,9] by applying graded pressure in a cuff placed proximal to the valve segment investigated, have shown that a velocity exceeding 30 cm/sec is necessary to prompt the normal valve to close. With velocities lower than this, the valves will not regularly close and reflux can persist, giving a false impression of the status of the valves in question. After ligation of the sapheno-femoral junction, there is not enough pressure or sufficient blood velocity to close the valves below the junction. For this reason, trunk reflux may be detected by color duplex scanning after compression-release at the calf.

At our institution, patients who are going to be submitted to varicose vein surgery for primary venous insufficiency have examination of their saphenous system by duplex scanning in the upright position before surgery. The saphenous diameter is measured at the femoral junction, and upper, middle, and distal thirds of the thigh. Depending on the height and weight of the individual, saphenous veins which were found dilated, tortuous, and irregular, and which demonstrate reflux, are routinely stripped from groin to just below the knee (Fig. 25.1). However, a saphenous vein trunk of normal size, which tapers down uniformly without tortuosity or aneurysmal dilatations, is preserved.

Even though there is evidence in the literature and in our clinical experience that the saphenous vein can be spared in those cases of patients with varicose veins in whom the saphenous trunk is found to be healthy, the definitive answer to the controversy of stripping the saphenous trunk or preserving it in a selective manner must await prospective randomized studies using duplex scanning and air plethysmography to evaluate long-term results. The diameter of the vein at different levels and the soundness of the trunk are considered in the randomization to strip or to preserve.

Another method of achieving competence of the sapheno-femoral junction in patients with varicose veins has been the application of venous cuffs at the first centimeter of the sapheno-femoral junction. The cuff is tightened until competence is achieved. The cuffs are made of Dacron or other prosthetic materials. Again, long-term results in a sizable sample of patients with hemodynamic information are lacking. Besides, the insertion of prosthetic material in young individuals, which form the majority of patients with primary varicose veins, is costly and, in our opinion, not justifiable.

Varicose Vein Surgery in a Bloodless Field

During the last three decades, we have learned to appreciate the benefits of a bloodless field as practiced by the orthopaedic, plastic and cardiac surgeons. In vascular surgery, the pneumatic tourniquet has been utilized to avoid clamping calcified vessels during the performance of distal anastomosis in bypass surgery. We have used the pneumatic tourniquet extensively during the resection of hemangiomas and other vascular malformations in patients with congenital vascular anomalies. More recently, the pneumatic tourniquet has been utilized to render a bloodless field during the endoscopic subfascial ligation of perforators. At our institution, we have used the pneumatic tourniquet in patients with extensive and grossly dilated varicose veins. In the past, patients with extensive varicose veins occupied several hours of our operating time. The introduction of the tourniquet has dramatically reduced the operating time and has allowed us to perform a complete removal of all varicosities without blood loss. The technique consists of exposure of the sapheno-femoral junction before applying the tourniquet. After division of the saphenous vein, in those cases in which stripping is to be performed, a flexible stripper is introduced through a small incision below the knee and retrieved at the groin. The vein is prepared for invaginated stripping, and the inguinal wound is closed in layers. A pneumatic tourniquet is applied at the upper thigh after wrapping the leg tightly with an Esmarch rubber bandage. The tourniquet is inflated at 300 mmHg and the operation can then be performed in a bloodless field. In 78 patients with extensive varicose veins and 97 congenital vascular anomalies operated upon, the average operating time has been 55 minutes (range: 45-80 minutes). When necessary, stripping is performed with the tourniquet inflated. The vein stripper slides easily under the tourniquet. The wounds are usually closed with steri strips, the extremity is carefully padded and a compression bandage applied. The patient remains in the hospital for a few hours and goes home during the late afternoon.

Ambulatory Venous Surgery

Ambulatory venous surgery has been practiced for many years. In 1930, De Takats[10] published his experiences with this technique. Nabatoff,[11] in 1972, described his method of complete stripping of the varicose veins as an outpatient procedure. The competition for hospital beds, the long waiting lists for varicose vein surgery and financial considerations have stimulated surgeons to seek options to operate as many cases as possible without compromising the hospital capacity. There are numerous reports in the literature dealing with this subject.[12-16] In a recent publication, Baccaglini, et al,[17] conducted a multicenter trial in 2568 extremities with varicose veins. Different anesthesia techniques were utilized (local, spinal, general, and local plus sedation). Post-operative hospitalization was required in only two cases. Post-operative complications included headache after spinal anesthesia and residual paraesthesia after femoral nerve block. The consensus of surgeons participating in this protocol confirms that surgery of varicose veins can be carried out on an outpatient basis with similar complications as observed in hospitalized patients. The authors conclude that outpatient surgery is cost-effective and diminishes the demand for hospital beds, while assuring that the quality of patient care is maintained.

Crochet-hook Vein Excision

In 1957, Thomas T. Myers, of the Mayo Clinic, reported that extensive removal of all varicosities, followed by ligation and stripping of the greater and lesser saphenous veins, was accompanied by 85% good-to-excellent results at 10 years. Since then, many thousands of patients throughout the world have been submitted to this procedure. The extensive scarring of the operation and the length and tediousness of the procedure have prompted the surgical community to seek new avenues of treatment for varicose veins. In 1975, Rivlin[18] reported the use of mini-incisions and fine pointed forceps for the extraction of the varicose tributaries of the saphenous vein. Since then, the method of stab avulsion through mini-incisions has been extensively practiced throughout the world. Special hooks have been developed by Müller,[12,13] Oesch,[14] Varady,[19] and Villavicencio.[20] The technique of stab avulsion phlebectomy has been used extensively over the last 20 years by Villavicencio. A set of specially designed hooks has been routinely utilized in every case of varicose vein surgery during the last 14 years.

Technique

With the patient in the upright position and the extremity shaved, the varicose veins are marked with indelible ink. The operating surgeon should mark the patient. The extremity is placed in the Trendelenburg position, and the crochet hook phlebectomy is performed through 2-3 mm incisions done with a number 11 scalpel blade. Incisions must be made parallel to the axis of the vein to prevent piercing it. The hook is introduced with its flat side under the vein. Once the tip of the hook has passed on the other side of the vein, it is rotated so its tip is pointing toward the skin. At this point, it is pulled back, lifting the hooked vein while counter-pressure is applied over the skin. A loop of vein is exteriorized by pulling gently. The maneuver is repeated through several incisions placed along the course of the vein until the complete venous segment has been excised. Incisions are placed approximately 1-2 inches apart, and at the end of the procedure are closed with steri-strips. Compression pads are placed over the wound and the extremity is wrapped with a thick roll of gauze and a firm elastic bandage. The small incisions heal uneventfully and are practically invisible after several months.

In summary, great advances have occurred in the management of venous disorders. The surgical management of varicose veins is more objective and based on sound hemodynamic and anatomic principles. However, the most important aspect of this progress is its continuous evolution. Research protocols are in progress to solve some of the most important problems in the management of these diseases. This is an exciting time in which technological advances have provided the necessary tools for sound investigation.

References

1. Large J. Surgical treatment of saphenous varices with preservation of the main great saphenous trunk, *J Vasc Surg.* 1985;2:886-891.
2. Hanrahan LM, Keshesian GJ, Menzoian JO, et al. Patterns of venous insufficiency in patients with varicose veins, *Arch Surg.* 1991; 126:687-691.
3. Koyano K, Sakaguchi S. Selective stripping operation based on Doppler ultrasonic findings for primary varicose veins of the lower extremities, *Surgery.* 1988;103:615-619.
4. Munn SR, Martin JB, MacBeth WAAG. To strip or not to strip the long saphenous vein? *Br J Surg.* 1981;68:426-428.
5. Sutton H, Darke S. Stripping the long saphenous vein: preoperative retrograde saphenography in patients with and without venous ulceration, *Br J Surg.* 1986;73:305-307.
6. MacFarlane R, Godwin RJ, Barabos AP. Are varicose veins and coronary artery bypass surgery compatible? *Lancet.* 1985;2:859.

7. McMullin GM, Colendge-Smith PD, Scurr JH. Objective assessment of high ligation without stripping the long saphenous vein, *Br J Surg.* 1991;78:1139-1142.
8. Van Bemmelen PS, Bedord G. Beach K. Strandness DE. Quantitative segmental evaluation of venous valvular reflux with duplex ultrasound scanning, *J Vasc Surg.* 1989;10:425-431.
9. Van Bemmelen PS, Bedord G, Beach K, Strandness DE. Status of the valves in the superficial and deep venous system in chronic venous disease, *Surgery.* 1991; 109:730-734.
10. De Takats G. Ambulatory ligation of the saphenous vein, *JAMA.* 1930; 94:1194.
11. Nabatoff RA, Starck DCC. Complete stripping of varicose veins with the patient on an ambulatory basis, *Am J Surg.* 1972;124:634-636.
12. Müller R. Traitment des varices par la phlebectomie ambulatoire, *Bull Soc Fr Phleb.* 1966;19:277-279.
13. Müller R. La phlebectomie ambulatoire, *Phlebologie.* 1978;31:-273-279.
14. Oesch A. Indikationen und Ergebnisse der ambulanten Varizentherapie, *Therapeutische Umschau.* 1991;48:692-696.
15. Goren G, Yellin AE. Surgery for truncal varicose veins: the ambulatory stab avulsion phlebectomy for truncal varicose veins, *Am J Surg.* 1991;161:166-174.
16. Goren G, Yellin AE. Invaginated actual stripping and stab avulsion (hook) phlebectomy: a definitive outpatient procedure for primary varicose veins, *Amb Surgery.* 1994;2:27-35.
17. Baccaglini U, Spreafico G, Sorrentino P, et al. Outpatient surgery of varices of the lower limbs: experience of 2,568 cases at four universities, *Int Angiol.* 1995;14:-397-399.
18. Rivlin S. The surgical cure of primary varicose viens, *Br J Surg.* 1975;62:913-917.
19. Varady Z. Die mikrohirurgische Phlebextraction, *Vasomed Aktuell.* 1990;3:23-25.
20. Villavicencio JL, Collins GJ, Youkey JR, et al. Nonsurgical management of lower extremity venous problems. In: Bergan JJ, Yao JST, eds. *Surgery of the Veins.* Orlando, FL: Grune & Stratton, 1985;335-356.

CASE OF SUPERFICIAL INCOMPETENCE

Bo Eklof, MD, PhD
Straub Clinic and Hospital
Honolulu, Hawaii, USA

Large Recurrent Circumferential Ulcer Due to Primary Incompetence of Long Saphenous Vein (Possibly Perforators) with Competent Deep Venous System

A 65-year old lady from the Big Island of Hawaii, who works in a coffee plantation and has 5 children, developed increasing varicose veins during the pregnancies. She has no previous history of DVT. Thirty years ago, in the end of the 60's she developed the first ulceration of the right leg. It developed gradually into a circumferential ulceration and amputation of the leg was recommended. In 1972, Dr. Yee in Honolulu operated on the patient with skin grafting and the ulcer remained healed for several years. Since the beginning of the 80's she has had several recurrences but never sought medical advice due to the previous threat of amputation. Since the beginning of the 90's the ulcer never healed and has developed into a large painful circumferential ulceration that she was treating with local herbs without compression. Because of the pain she again consulted Dr. Yee in November 1995 and she was referred to the vascular service at Straub in Honolulu.

At admission she had a circumferential, granulating ulceration at the lower part of the right leg with a length of 12 cm (Fig. 1). Cultures showed growth of staphylococcus and pseudomonas. She had normal pulses in the posterior tibial and dorsalis pedis arteries. Hand-held Doppler examination showed severe reflux of the long saphenous vein with competent deep veins.

Duplex scanning of the veins showed patent and competent deep venous system. There was severe reflux of the long saphenous vein which communicated with the short saphenous vein through a Giacomini communicator. SSV was competent. There were no incompetent perforators, but the area under the large ulceration could not be studied. Ascending venography showed no obstruction and no signs of previous DVT; the deep veins as well as the long saphenous vein were widely patent; there were several perforators between the posterior tibial vein and the long saphenous vein (incompetent?)

Descending venography of the right leg through catheterization of the left femoral vein showed grade 4 reflux of the long saphenous vein. The deep femoral vein was competent and there was a slight grade 2 reflux of the proximal superficial femoral valve (Fig. 2).

CEAP CLASSIFICATION: C2,3,4,5,6s; Ep; As; Pr2,3

Figure 1.– 65 year old woman at admission with a circumferential granulating ulceration of the right leg with a length of 12 cm.



(Figures 2 & 3 on the next page)

DISCUSSION

DR. O'DONNELL: I think everybody agrees that ligation and stripping is most appropriate. What isn't settled is whether the perforators should be treated. I found it fascinating that we have a new anatomical finding that the perforators are now related to the long saphenous vein! The questions are: 1) do you treat the perforators at this time? And (2) how do you treat the basic lesion, the skin ulcer? Dr. Raju, would you place a skin graft on this ulcer at the same time or leave it alone?

DR. RAJU: I think I would just strip the saphenous vein and skin graft the ulcer at the same time. However, our practice has been altered a little bit in recent years simply because the gatekeepers don't allow us to pre-admit these patients. There is no luxury of admitting these patients for a week and give them antibiotics even though you can do it with a great deal of effort. We just admit them in the morning unless the patient is septic. If the wound is reasonably clean, we proceed and have even done deep venous reconstruction under those circumstances. Even though you would think that the incidence of infection would be high, it is not very different from

Figure 2.– Descending venogram of the right leg through catheterization of the left femoral vein showed severe reflux (Kistner grade 4) of the long saphenous vein (upper right arrow), competence of the deep femoral vein (left arrow), and slight reflux (Kistner grade 2) of the proximal superficial vein (lower right arrow).



Figure 3.– Healing of the circumferential ulcer after high ligation and stripping of the long saphenous vein with skin grafting. The patient has remained healed for more than 3 years.



clean contaminated cases. So I think there should be less preparatory time before you do what you need to do.

DR. O'DONNELL: Ralph, what would you do? Are you going to use a venous pump for these patients?

DR. DEPALMA: No! I would operate on this patient, strip the long saphenous probably from above downward and all the way to the ankle.

DR. O'DONNELL: Why are you going all the way to the ankle?

DR. DEPALMA: Well, I'd get as close as I could to the ulcer. I think about 20 percent of saphenous vein have deep perforators associated with them by other communicators at the same level. Dr. Cockett has shown pictures of this anatomy. I've seen it frequently in my own dissections. So I think in this case the saphenous vein is the main point; I wouldn't worry separately about the perforators. I am concerned, however, about the combination of organisms present here. They reported staphylococcus and pseudomonas in this case. I would be very worried about these. I would clear that patient for a 24-48 hours hospitalization with IV vancomycin and an effective anti-pseudomonas drug. I would probably treat the ulcer locally with sulfa-nylon after this treatment. I'd go ahead and strip. I would not attack the deep system at this point. Then I'd graft, all at one operation. I would mesh the graft and keep that patient in the hospital for three to four days on IV antibiotics with the leg elevated.

DR. PERRIN: I agree with Ralph DePalma. I will try first to heal the ulcer by compression, lateral compression, but I will operate on him before I complete healing. I will prescribe antibiotics, systemic antibiotics, the day before or four or five days before the operation, but I will do high ligation and stripping.

DR. O'DONNELL: You strip down to the ankle, and I think it's nice to say that, but as I remember, this ulcer is circumferential. So what happens to the saphenous vein across this ulcer? Dr. Perrin, where would you strip to?

DR. PERRIN: I would strip to the ankle in this case.

DR. O'DONNELL: It would be pretty tough to get anterior to the medial malleolus in this patient, but maybe you know better.

DR. DEPALMA: I have an opinion. I'd make an incision over the saphenous at the malleolus, and pass a lighted probe proximally. If the vein is there, I would probe it upwards with the lighted probe to see if it went to the knee. If it were in continuity under the ulcer, I would strip it. I'd remove the long saphenous completely to the ankle. I probably would make a malleolus incision -- there's room there. When you can see the anterior malleolus the vein is probably under it. So I'd pick it up here first.

DR. KISTNER: I agree with cleaning it up, probably including intravenous antibiotics, and then going ahead with surgery. Surgery would be similar to what the others have suggested. We begin with ambulatory treatment with unna boot on these cases to see how they respond. The response may be dramatic and helps make a qnicker, safer treatment phase. If this is not successful, I'd go ahead with surgery. The question I'd like to ask is whether those who would treat with stripping and skin grafting would use prophylactic anticoagulants? This is a patient who has venous disease and will be on bed rest for a period of time. I'd ask Ralph about that.

DR. DEPALMA: If I were going to put the patient to bed, I would probably use Lovenox in prophylactic dose, 30 milligrams BID, Sub Q.

DR. O'DONNELL: The rest of the panel pretty much concludes

they would use prophylaxis here.

DR. DALSING: I have one question. Was that a swab or did you actually take some tissue and send it for culture, because I think it makes a difference. A swab culture can grow almost anything if it's an open wound without protective skin. So I'm not so sure I'd be that worried about systemic or even significant local infection in the wound. This looks like a real clean ulcer to me. So I'm not so sure I'd be as aggressive with antibiotics. I'd probably administer perioperative antibiotics. In terms of therapy, I agree with the stripping operation probably being just above the ulcer and ignore the perforators for now.

DR. O'DONNELL: Peter, would you add a SEPS procedure because there are perforating veins here. It's hard to believe that a patient with an ulcer like this doesn't have incompetent perforating veins in addition to her greater saphenous incompetence. Would you go ahead and do a SEPS?

DR. GLOVICZKI: This is a patient I would not necessarily insist to perform SEPS on. I would operate on the superficial system. I would strip the saphenous vein all the way down as far as I could above the ulcer. It makes no sense to leave in an incompetent calf saphenous vein in this patient. This patient does not have proven significant perforator incompetence, and with that amount of circumferential ulceration, it may be technically difficult to gain good access to the subfascial space.

DR. O'DONNELL: Just to get the panel's opinion, would anybody use Apligraf?

DR. GLOVICZKI: I have recently used Apligraf several times in this situation. If the ulcer is infected however, it is not going to work. So you really want to clean it up thoroughly before you put the Apligraf on it.

DR. BELCARO: This is a very good example that surgery should be performed by a group of people with different competences. When you come here and talk about saphenous vein stripping and perforators, it's only part of the problem. Surgery is evolving. You have to consider many aspects. You have to be a physician expert in medical therapy. You have to have different competences. I know we say that for hammers everything is a nail, but the point is that surgery is only part of the solution of the problem because you can do anything and after three months you have the patient with the same problem. So the focus of a faculty like this is to address that surgery is changing. Surgical treatment is only part of a complex treatment, which includes medical treatment, psychology, tutorials, and several other aspects. If we focus only on stripping, and interrupting perforators, we really miss the point because the evolution is not in simple superficial competence but in integrating different levels of competence.

DR. O'DONNELL: Well, I appreciate those remarks, and I guess that defines who a vascular surgeon is, in the United States at least. Vascular surgeons do medical as well as surgical therapy. I agree with you that it needs to be a team approach. To think that vascular surgeons in the United States, however only focus on surgery I think is a miscalculation.

DR. CAPRINI: I just wanted to bring up a couple of things because we have such an outstanding panel here just to see what they might say. We have been taking a look at the saphenous with the duplex. In many cases just below the knee the saphenous turns normal so we usually don't strip the calf part of the saphenous. However, in cases like this case report we almost always see that the saphenous is big all the way down to the ankle with duplex. When it is, we try to strip all the way to the ankle. That would be what I would use to determine whether or not to fully take out the vein. Another thing is that I notice this patient has pretty bad toes, and one of the things that we found in taking care of some of these patients is to make absolutely sure to eradicate any elements of fungal infection in those toes before we do a definitive operation. We've also used pneumatic compression, but with foot compression, or foot and calf compression, we've gotten pretty good results, especially if like Raj said, there was some problem getting that patient right into the hospital when they didn't want to come. The other thing is that I think as far as prophylaxis is concerned this patient needs a risk assessment. If that patient has a lot of risk factors, then that patient should have prophylaxis. With surgery in age over 65, something like low molecular weight Heparin would be indicated. Then finally, a comment about after care. As was mentioned, a lot of these patients wouldn't wear their Class II appropriate stocking, but we found sometimes we can get them to wear the circaid device.

DR. THORPE: It concerns me that two of the speakers said they didn't think venography was of any value, and I want to say that I think it's very important as part of the workup. In fact, I've seen a patient who had this situation, stripping and valvuloplasty, and later underwent an amputation. Now, when ulcers start to happen on the opposite leg, we look at the IVC. It's possible that in some of these patients there's a high caval stenosis or a caval occlusion that can be treated. We didn't know how to do this ten years ago but now we can look in the iliac or cava for an obstructive problem that could account for venous hypertension in one leg or both legs.

DR. O'DONNELL: Well, that's interesting. Certainly in our unit we probably would not get a phlebogram. We'd rely on duplex scan, but I'd be curious what the panel would do. How many would opt for obtaining a phlebogram. Three out of the panelists agree with you, Patricia. So that's interesting, probably in an advanced case.

DR. MYERS: Can I propose a totally different approach to this patient than that given by the panel? I think Mark Malouf made the most important comment, and that is that removal of the long saphenous vein is not required to heal this ulcer, but is required to prevent it from recurring. Therefore, I don't personally believe there is any hurry whatsoever to remove the long saphenous vein. Now, if you look at the ulcer, a lot of it is over quite mobile parts of the leg, and I consider that ambulatory treatment has the potential to markedly reduce its size and possibly even get it to heal without the need to admit the patient to the hospital. I would certainly start on a regime of local dressings with simple gauze, and an extremely tight compression bandage to get rid of the venous hypertension that's causing it with the expectation that the combination of contraction and epithelial growth into the ulcer will markedly reduce its size and the extent of the skin graft that you may or may not require at the end. I think this is an eminently healable ulcer. Once it's healed, then at some time at your convenience, perhaps even on an ambulatory basis, the long saphenous vein can be removed purely to prevent recurrence and not to help the healing of the ulcer. This would result in the least time in hospital and the greatest praise from your medical insurance group.

DR. O'DONNELL: Do the rest of the panelists agree that they would not strip the vein, that they would try a course of compression

and special wound mendicants rather than stripping? Do you all agree with that?

DR. DEPALMA: No, I don't. I think it would take a long time to get this ulcer to heal, and I think it would be sort of what I describe to my residents as "diddlefritz." I don't think I'd get that to heal in any reasonable time. I couldn't, maybe Kenneth could. I would just get right to surgical treatment and do it.

DR. KISTNER: While external treatment may get it to heal, I think it heals quicker if you take care of the venous pathology and this pathology is easy to take care of. I think it should be repaired surgically.

DR. O'DONNELL: Maybe you could comment because there's a thread of Kevin Burnand's thesis of "predestination" to venous ulcer. In New England a long time ago there was a religious movement that held everybody was predestined, either to heaven or hell. As Burnand espoused yesterday, ulcers are similarly predetermined in to which ones are going to heal and which are not. Can you predict whether this ulcer is going to heal or not depeuding on whatever you give, Bob? Do you subscribe to that predestination theory?

DR. KISTNER: No, I dou't.

DR. GLOVICZKI: I concur with Bob that although you could reach complete healing without treatment, why would you want to leave a largely incompetent greater saphenous vein and have a persistent, otherwise treatable cause of venous hypertension even during the healing period? Once the infection is treated, I would treat the underlying cause and operate.

DR. GOREN: It is a pity that additional data such as VFI and the size (by duplex) of the long saphenous vein is not available. I would like to congratulate Dr. Villavicencio for his excellent presentation of sclerotherapy approach. May I quote the late Dr. Tim Myers from the Mayo Clinic who said many years ago that "sclerotherapy (for truncal varicose veins) is a return to the Dark Ages of medicine." This statement is also true today in spite of the introduction of the gnided injection method. Superficial reflux was shown by Bjordal in the early seventies to be the cause of elevated ambulatory venous pressure in truncal varicose veins, and its elimination is a must for a long lasting result. But I take issue with the arbitrary removal of the entire length of the long saphenous vein to achieve that goal. Prof. Hach has classified long saphenous varicosities according to the location (in the saphenous trunk) of the end reflux point into four groups. Only in group IV (the "straight through" incompetence of Tibbs of Oxford) will the ankle to groin stripping be indicated. In 1082 consecutive operated long saphenous varicose limbs in my practice, only in 7% (66 limbs) was there need for a total ankle to groin stripping. In the majority of cases (74% or 704 limbs) the end reflux point was found located just below the knee (Hach group III), thus a stripping to this level will was performed. In this particular case, since the end reflux point was not assessed, any blind approach would be a questionable approach. I fully subscribe to Dr. Belcaro's suggestion that maximum possible preservation of the long saphenous vein trunk is imperative in all cases. The Hach classification based on the location of the end reflux point will aide in this noble quest.

DR. O'DONNELL: Yes, and to your point, I think the organizers did provide the information. They did a descending phlebogram which was interesting. It was a Grade IV reflux.

DR. DEPEDRO: May I have the lateral projection slide of the ulcer. Although I am a vascular surgeon, I think that the point should be at first what we do in our country in a case like this. We think that unless we mobilize the fixed tibial tissue via physiotherapy and take this to a lesser stage of severity, we cannot treat the rest of the pathology of the venous reflux. We first utilize physiotherapy to liberate the joint and improve the muscular pump function, and afterwards we do surgery. If this is not done, the wound is predestined to poor healing no matter what kind of surgical technique you use.

DR. O'DONNELL: That's a very good comment, and it goes along with what Dr. Belcaro said, that this should not just be a bunch of surgeons. It should be a multi-modality team. In addition to the psychiatrist and the social worker, now we've added the physiotherapist. So I think that's a very good point.

DR. ABU-BAKER: I'd like to congratulate all the participants about their good workshops. So about my thinking, we have here two problems to treat. The first one is the reflux of the venous saphena and the perforants, and the other thing is the big varicose ulcer. To treat the reflux, we have many methods. We can do invasive surgery by stripping, or noninvasive surgery, which means micro phlebectomy. The second is sclerotherapy, or echo-guided sclerotherapy. Third, we can make a compression bandage. Other, treatments include drugs such as Daflon, Detralex and Glivenol. So about the surgery, we have two things to do. First of all, the reflux of the saphenous vein. We can strip it and make a skin graft at the same time. As the ulcer margin I think, we must go with a knife below it because just to take it away. The case is very simple, but you must know how to do it. Within three months I can close the ulcer.

DR. ALLEN: I'd like to ask the panel if they would consider using growth factors in the treatment of this ulcer.

DR. RAJU: I have a brief comment. I think this patient will not come back to you if you delay definitive treatment too much. She has been living with this ulcer for 20 or 30 years, and has been totally noncompliant. I think these modalities that take a long time, will lose this patient. I think you should approach this patient quickly, do what you have to do, and if you want to fiddle around with long term modalities, do that after you have done the basic stuff.

DR. O'DONNELL: The rest of the panel, do you use growth factors?

DR. DEPALMA: Very controversial. I don't, no. I really don't understand their rationale. I don't think I'd use them here. You just need to fix this thing: i.e., the reflux and graft the ulcer.

DR. DALSING: Growth factors are very expensive. I think the only time you should consider their use is when you've tried everything else and have a chronic wound that won't heal. This lady really hasn't been treated appropriately with compression and standard dressings. So I probably would not use growth factor agents on this wound.

DR. MALOUF: I have a very small comment about the antibiotics. There is some difference of opinion about the use of antibiotics, but this is a relatively clean ulcer. The only antibiotics I would entertain using is the prophylactic antibiotics to preserve the skin grafts as the others suggested.

DR. VILLAVICENCIO: We use antibiotics in-patients with infected ulcers. The ulcers are always colonized, like in this particular case. I'm sure that when you take a swab you will grow

something. But when the ulcer is infected, it's painful, it's red, it's angry looking. In those individuals we have found that a course of IV antibiotics will quickly control the infection, and then you can go to further measures.

DR. BELCARO: Just an assumption. Every ulcer is infected. According to cultures, you will always find something there. So almost by definition as long as you have the skin open, there is an infection. So I think you should use antibiotic treatment any time you have an open ulceration.

UNIDENTIFIED SPEAKER: Can I come back on that? That's absolutely right. Even if you just deal with antibiotics, you're not going to get rid of all these parts. What you need to do, once you actually aim to heal it with skin graft, is just to actually protect your skin graft for the appropriate organism. It doesn't matter if you've got pseudomonas, staph, whatever. Skin grafts will take providing there is a good bed. What you need is to protect it from a hemolytic strep.

DR. PERRIN: I would propose that the patients would be assessed one month after surgery by a duplex scan in order to identify any perforating vein which was missed, or a collateral branch, in order to treat them because it is easy to miss something in this kind of patient. I think duplex is very helpful.

DR. TRIPATHI: Based on the experience with diabetic ulcers, what we in our center do with the venous ulcers is to take a superficial scrape and also use aspiration culture from the deeper layers of the venous ulcer. If the deeper layer culture is negative, then we go ahead and we scrape the superficial layer and put skin grafts in the OR with prophylactic antibiotics. I have never had a problem. I don't know if other people have experienced the same.

DR. PARSI: I'm interested in the role of microthrombi in the pathophysiology of this sort of ulcer. As you know, a lot of these patients have thrombophilia. Up to 26 percent of patients with ulcers have Activated Protein. Up to 40 percent have anticardiolipin C Resistance antibodies. Were these patients screened at all? Some of the thrombophilias like MTHR mutation with high homocysteine levels, can actually be treated with folic acid.

DR. O'DONNELL: That's a very good point. Certainly with deep venous reconstruction in our unit or in patients undergoing SEPS we would do a screening. What about this lady? Would most of you do a hematologic coagulation screen?

DR. KISTNER: No. This is pure primary reflux disease. I don't think she has any sign of thrombotic disease.

DR. DEPEDRO: A small comment. Permanent venous hypertension in this patient, which of the members of the panel think that this kind of ulceration is due to the insufficiency alone of the long saphenous vein and which think that this is due to the atrophy of the muscular pump?

DEPALMA: I think it's due to both factors, and I think she's absolutely right. There is wasting of the calf muscle. My idea in operating on it rapidly is to get it covered so that the patient can move the ankle around.

DR. RAJU: I think these massive ulcers are larger than what you think would be appropriate for isolate saphenous reflux. That seems to be somewhat more common in the older age group. We have seen a number of seventies and eighties with this kind of presentation that you don't see in the younger age group. So sclerosis of the deep veins and compliance changes might have something to do with it. I wonder whether anybody in the panel has seen the younger patient with this kind of isolated saphenous reflux with massive ulceration.

DR. KISTNER: The patient was 65 years old according to the history and had her first ulcer at 30 years. It brings up the question of where this patient has been in the 30 years. Has she been under any therapy at all or just totally neglected? The reason to raise this point is that there exists a mass of medical practitioners who have no understanding of this whole problem, and they would treat with a salve but never provide any compression. I wonder if this patient fits into that category.

SURGICAL MANAGEMENT

DR. EKLOF: This is an unusual case to show for saphenous vein incompetence. I took this case because I think it's a badly treated case for 30 years. The only alternative she was offered before was amputation of the leg, indicating how far we have to go to get widespread understanding of how to deal with sick patients like this. She had poor treatment until the most senior of surgeons in Hawaii, the first surgeon who got his American Board in Surgery sent her over to me, Lester Yee. He is now in his eighties and still practicing. I think he saved her at least from amputation. We admitted the patient, treated the infection, and cleaned up the ulcer. The reason we did the venograms was that I thought that this was more than just saphenous vein incompetence. It was such a longstanding ulceration. We couldn't find any perforators with a scanner under the ulcer. She had no perforators above the ulcer. We did high ligation and stripping of the GSV to just above the ulceration, and skin grafted the ulcer, which healed in about a week (Fig. 3). This was about three years ago. I tried many times to scan her, and I offered her to come to the hotel tomorrow to be part of the workshop, and scan her leg, but she could not make it. So I don't know more about the perforators in this patient. Pathology of the vein that we removed showed an arterialized vein due to the long standing turbulent reflux for many years.

II. PERFORATOR INCOMPETENCE

CASE OF PERFORATOR INCOMPETENCE - MAKING SEPS BETTER

Ralph G. DePalma, MD, FACS
University of Nevada School of Medicine
Reno, Nevada, USA

Perforator vein incompetence contributes to ulceration when abnormally elevated pressure is transmitted to the skin usually at the ankle medially. To correct this, a variety of surgical techniques have evolved; I suggest technical modifications of SubFascial Endoscopic Surgery (SEPS) to include extrafascial submalleolar perforator division and combinations of other interventions.

In 1966, Linton's approach to perforators was modified by eliminating longitudinal incisions, creating a series of bipedicle flaps in natural skin lines and avoiding areas of severe skin involvement. This procedure was performed by remote subcutaneous access

obliterating perforating veins from the crest of the tibia to the submalleolar region. Long-term results with this approach were reported in 1974.[1] No major wound infection or necrosis of flaps occurred. The ligation of inframalleolar and foot perforators as well as those in the calf was emphasized. The ulcer was dissected subfascially and perforators in the ulcer bed ligated directly and skin grafts applied in one operation. Using this approach, the recurrence rate for venous ulcers ranged from 9 to 10% in 168 limbs amongst 141 patients with observations extending 5 to 10 years in three series.[3,4,5] We later used a phlebotome passed subcutaneously in a line to interrupt the posterior venous arcade and Cockett's perforators.[6]

With the availability of Duplex scanning, and the realization that a more precisely focused approach could alter transmission of venous hypertension to the skin, the scene was set for less invasive procedures. At the same time, endoscopic techniques were developed resulting in specialized equipment. In 1985, Hauer reported an experience using endoscopic techniques to divide perforating veins in the subfascial space in the lower extremity.[7] Two retrospective series from Europe, Jugenheimer, et al 1992[8] and Pierik, et al 1995,[9] described their experience with SEPS. Variations of the technique were subsequently described in the literature.[10,11,12,13] In 1997 the North American SEPS Registry results were presented at the Society for Vascular Surgery, reporting on 148 patients from 17 different centers. Although the results as reported in the Registry, the largest study to date, continued to be encouraging, a disappointing 22% ulcer recurrence rate at 30 months,[15] suggested a need to re-evaluate not only indications for SEPS but technical modifications which might improve results.

Indications

This procedure is used for patients with severe CVI clinical disease, CEAP Class 4 to 6.[16] It is used most frequently in our practice for Class 5 or 6 patients, who, by definition, have active or immediately past ulceration. The procedure is employed for patients with previous deep venous thrombosis, valvular incompetence, or combined abnormalities, which may be corrected whenever practical. Patients with reflux tend to have better outcomes. Unless correctable, we consider caval occlusion to be a contraindication to SEPS as a sole procedure.

Preoperative evaluation

Duplex scanning includes examination of the greater saphenous veins and deep veins for obstruction and valvular incompetence, as well as identification of incompetent perforator veins. It is important that this be done in a standing position. We now recommend ascending and descending phlebography for all patients, in addition to duplex scanning. These procedures are best for finding areas of recanalized thrombosis or to locate incompetent perforators.[17] Phlebography is needed to plan combined operations such as valvular repair, inframalleolar perforator interruption, and iliac bypass for occlusive disease.

Surgical Technique

SEPS is a relatively new procedure and techniques vary somewhat. We no longer use a tourniquet or exsanguination and we use two port systems placed just below the knee. When two ports are used, incision placement is crucial to prevent dueling instruments. We use a balloon dissector[11] inserted through an initial transverse incision in the fascia with saline inflation to expand the balloon's width and length, thus creating an elongated bloodless working space. The balloon is then removed and replaced by an endoscopic probe which provides a constant flow of carbon dioxide to maintain expansion of the subfascial space. This port also has an endoscope and light source, which are introduced into the created space at this point. A working port is then placed under direct visualization. Perforating veins ranging in number from 6 to 8, involving the Cockett 2 and 3 complexes are divided through this working port.

When inframalleolar perforators are present, i.e. Cockett 1, which is located on average 7 cm above the calcaneous, we have used two approaches. A 14 gauge mini-port has been inserted and the subfascial ligation of this perforator is carried out. On the other hand, when an ulcer is present which requires skin grafting, the ulcer is excised and extrafascial technique is applied in the lower third of the leg and inferior to the malleolus to include the foot perforators.

Results

Twenty-six Class 5-6 patients have received operative interventions. All patients received Duplex scanning along with ascending and descending phlebography. Depending on the patterns of reflux or obstruction, differing interventions were used, including: superficial stripping 18; perforator interruptions 26: 12 extrafascial, 14 SEPS; valveplasty 2; and Palma cross over 2. Twenty three extremities remain healed at follow up, ranging from 15 to 50 months; three ulcers recurred, two healed promptly after a second operation either using SEPS or extrafascial interruption of the lowest Cockett or foot perforators. One recurrent ulceration persists; this patient declined further intervention.

Discussion

The largest study to date, the North American Subfascial Endoscopic Perforator Surgery Registry Report,[14] provided data from 17 medical centers including ours, between June 1993 and February 1996. The preliminary report looked at safety, feasibility and early efficacy of the procedure and was a retrospective analysis of 146 patients undergoing SEPS with different surgeons, medical centers, techniques and instrumentation. Mean follow up was 5.4 months and an ulcer healing rate of 88% was reported. There was evidence of more rapid ulcer healing as compared to non-operative treatment. No postoperative deaths or early thromboembolism occurred. Since that time, at our center, we have experienced a single episode of postoperative thromboembolism which was effectively treated with anticoagulation.

Clinical scores using CEAP grading have shown improvements ranging from 9.4 to 2.9 after surgery. A further study of intermediate results was published in 1999.[15] Although early results were encouraging, the 22% ulcer recurrence rate at 30 months was not. Recurrence is most common in CVI due to obstruction rather than valvular incompetence. I believe that in order to improve the results of SEPS, increased attention to submalleolar and foot perforators will be required. The subfascial space at the ankle at the malleolus is quite tight and difficult to access. While we have used SEPS approach with a separate 14 gauge port in the lower leg. I believe it is best to deal with these perforators using an extra-fascial approach.

These can be documented by ascending phlebography and can also be located immediately pre-operatively using a Doppler technique. As Kistner[17] recommended, one should not hesitate to use combinations of procedures beginning with the simplest as determined by preoperative duplex scanning, and ascending and descending phlebography. Varying interventions in the deep system might be needed; particularly caval or iliac obstructions which can be missed by limb duplex scanning. These respond poorly to perforator interruption. SEPS is a useful and elegant procedure. Results can probably be improved by additional interventions. Among these, extra-fascial ablation of the submalleolar perforators is advisable when these contribute to skin changes.

References

1. Linton RR. The communicating veins of the lower leg and the operative techniques for their ligation, *Ann Surg.*1938;107:582-593.
2. DePalma RG. Surgical therapy for venous stasis, *Surgery.* 1974;76: 910-917.
3. DePalma RG. Surgical therapy for venous stasis; Results of a modified Linton operation, *Am J Surg.* 1979; 137:810-813.
4. DePalma RG. Surgical treatment of chronic venous ulceration In: Raymond-Martinbeau R, Prescott M. Summo, eds. *Phlebologie 92.* Paris, France:John Libbey Eurotext 1942: 1235-1237.
5. DePalma RG. Evolving surgical approaches to venous ulceration In: Negus O, Jantet G.,Coleridge-Smith PD eds. *Phlebology 95.* London: Springer 1995: Suppl I 980-982.
6. Edwards JM. Shearing operation for incompetent perforating veins, *Br. Surg.* 1976;63:885-886.
7. Hauer G. The endoscopic subfascial division of the perforating veins-preliminary report (in German), *VASA.* 1985;14: 59-61.
8. Jugenheimer M, Junginger TH. Endoscopic subfascial sectioning of incompetent perforating veins in treatment of primary varicosities, *World J Surg.* 1992;16:971-975.
9. Pierik EG JM, Wittens CHA, VanUrk H. Subfascial endoscopic ligation in the treatment of incompetent perforating veins, *Eur J Vasc Endovasc Surg.* 1995;9:38-41.
10. Sullivan TR Jr., O'Donnell TF, Jr. Endoscopic division of incompetent perforating veins In: Glovitsky P and Yao JS, eds. *Handbook of Venous Disorders.* London: Chapman and Hall; 1996: 482-493.
11. Tawes RL, Wetter LA, Herman GD, Fogarty TJ. Endoscopic technique for subfascial perforating vein interruption, *J Endovasc Surg.* 1996; 3(4):414-20.
12. Bergan JJ, Murray J, Greason K. Subfascial endoscopic perforator vein surgery: A preliminary report, *Ann Vasc Surg.* 1996;10(3):211-219.
13. Gloviczki P, Canton LG, Cambria RA, Rhee RY. Subfascial endoscopic perforator vein surgery with gas insufflation In: Gloviczki P, Bergan JJ, eds. *Atlas of Endoscopic Vein Surgery.* London: Springer-Verlag; 1998:125-140.
14. Gloviczki P, Bergan JJ, Menawat S, Hobson RW. Safety, feasibility, and early efficacy of subfascial endoscopic perforator surgery: A preliminary report from the North American registry, *J Vasc Surg.* 1997;25:94-105.
15. Gloviczki P, Bergan JJ, Merawat SS. Midterm results of endoscopic perforator vein interruption for chronic venous insufficiency; lessons learned from the North American Subfascial endoscopic perforator surgery (NASEPS) Registry, *J Vasc Surg.* 1999;29:489-502.
16. Executive Committee, Nicolaides AN, Chair, American Venous Forum: Classification and grading of chronic venous disease in the lower limb; a consensus statement. In: Glovitsky P, Yao JST, eds. *Handbook of Venous Disorders.* London: Chapman and Hall; 1996: 652-660.
17. Kistner RL. Definitive diagnosis and definitive treatment in chronic venous disease: A concept whose time has come, *J Vasc Surg.* 1996;24:703-710.

THE VENOUS ULCER

Ermenegildo A. Enrici, MD
Argentine Catholic University
Buenos Aires, Argentina

The venous ulcer is the most important epiphenomena occurring in the course of the Chronic Venous Insufficiency (C.V.I.) Syndrome. When present, its onset strongly affects the patient, who is unable to continue his normal activity. In our experience, from 444 cases followed up for 10 years, 50.67% presented an ulcer during this lapse. This percentage rose in posthrombotic syndromes (65.51%) and decreased in those patients who did not present deep venous pathology (46.25%).

As aforementioned, the venous ulcer is a further episode in the course of indurative hypodermitis of the C.V.I. Syndrome, and therefore its pathophysiology is closely related. This disease is a product of the permanent reflux towards the superficial system during muscular contractions, through the insufficient Direct Perforant Venous System.

In our series, patients were evaluated with phlebography and phlebomanometry. Among them, 56,53% had a history of previous DVT and 43.46% showed an intact DVS.

In 1876, Le Dentú described 2 types of perforant veins: direct & indirect. The latter connect the Superficial System with a muscular vein of the leg and thence, through it, run into the Deep Venous System. They do not participate much in the disease, as during muscular contraction, the point of maximal reflux, with pressures ranging from 200 to 300 mm Hg provoke the total collapse of this muscular vein, so avoiding the reflux or buffering its magnitude.

On the other hand, direct perforants are those that directly connect the Superficial System with the deep principal or axial veins, which latter are submitted to lower pressures - 100 to 15° mmHg - during muscular contraction; they do not collapse totally but partially, in the middle. Direct perforants emerge from the lateral partly open edge and, due to the Venturi effect, tend to suction the blood towards the interior of the axial vein.

Direct perforants of the thigh and upper third of the calf run into larger cross-section veins like the Long Saphenous Vein or collaterals of similar caliber. Because of this and once perforant valvular insufficiency is established, the reflux is rapidly neutralized. On the other hand, the direct perforants in the lower part of the leg open up in a fine superficial vein, the Leonardo's vein which is usually of smaller caliber than them. This provokes the important dilatation of these perforants, and the impossibility of the superficial vein to neutralize the reflux, which progressively will reach the capillary bed and finally cause the trophic changes at skin level. We have observed that this situation takes place within what we called "Venous Buffer Circuit", formed by the Long Saphenous Vein to the front, Leonardo's vein to the rear and the LAA at bottom, which links both closing the "superficial circuit" at the submalleolous level. The superior, medial, inferior Cockett perforants and the fourth, submalleolar, which we had described, constitute the participating perforant system. At the deep level, the Posterior Tibial and Internal Plantar Vein complete the circuit. This Venous Buffer Circuit, which in the first stages is able to compensate the reflux by its superficial constituents; when global insufficiency ensues, the circuit fails to compensate the reflux thus creating permanent stasis and retrograde hypertension which transmits to the skin and underlying tissues originating the cutaneous lesions.

When the Deep Venous System participates in the insufficiency either caused by obstructive, essential, posthrombotic reflux, or a combination of these expressions, does not contribute to modify the magnitude of the reflux but its duration, possibly limited by the caliber of the insufficient perforant at the peak of the reflux.

Conversely, and determined by the destruction of the valves, the duration of the reflux is prolonged, as the reflowing blood amount increases and the size of the intervalvular compartments augments. This fact is responsible for the high incidence of venous ulcer.

Microscopically, the zone is severely affected; capillaries look elongated, dilated and tortuous mainly near insufficient direct perforants. Thrombosis of the capillary vessels interferes in skin nutrition process thus predisposing to ulceration. This phenomenon also compromises the initial lymphatics, which play a role in this pathophysiological process.

Norman Browse has demonstrated abnormalities of interstitial fibrinogen in venous hypertension. Plasma fibrinogen level is elevated, and is related to an increase in the inhibitor PAI 1 from the endothelium of the vessels and the smooth muscle of the venous wall. After some time it is possible to observe a fibrin cuff within the papillary plexus of the skin, along with an inflammatory infiltrate basically composed of macrophages and T lymphocytes.

Another very important factor in the reduction of venous hypertension is the calf muscular-venous pump. When hypertrophied, it reduces the intra-muscular pressure in the standing position to less than its half, thus causing functional insufficiency. Ineffective contraction of the pump insufficient to evacuate the DVS, generates permanent hypertension which can start by itself the disease onset. Its maximal expression is the Phlebo-arthrosic Syndrome, characterized by fibrous sclerosis, which advances over tendons and joints, fixes the tibiae-tarsal joint, and impairs the function exerted by the muscle-venous pump thus obstructing the evacuation of the DVS. The result is gigantic ulcers, which tend to heal when the patient is put to rest, but reopen with prolonged standing position.

Not all venous ulcers have a similar behavior. Some of them are due to such a severe deep venous hypertension that collapses arterial capillary flow and originates necrotic foci in the meta-arteriole. These ulcers have an ischemic behavior, and are characteristically small, submalleolar, extremely painful and do not develop the consecutive stages of hypodermitis due to its sudden onset.

Physical Examination of the Ulcers

Debridement should precede physical examination so as to fully assess the characteristics of the ulcers. Localization, borders, bottom, depth, type of secretion, and persistence despite treatment are important points. The latter obliges to rule out malignization which although infrequent, may be present.

Lesions may be unique or multiple, and present variations in shape and size. Progressive growth without treatment may attain after several years the whole circumference of the leg. In the beginning, they present as superficial lesions, but as they increase in diameter, they also gain in depth. Examination of the bed of the wound is essential. When chronic, its appearance is indurative and rough, sometimes with sanious secretion and even presenting satellite adenopathies. During progression, involvement of deep bone and nervous structures may lead to short or long saphenous nerves compromise depending on the localization of the lesion. This produces acute pain which is usually less intense than that of ischemic origin. Superimposed infection may cause reticular or trunk lymphangitis which worsen the outcome.

- **Peri-Ulcer** tissue is primarily affected with capillarytis, and/or streptococcal dermytis. During its evolution, different modalities may be present:
- **Eczematous** with inflammatory features and scabby surface.
- **Paracheratosic** with fine or gross desquamation adopts a psori asiform aspect.
- **Purulent** exudates.
- **Combinated Forms.**

Depth and extension of the ulcer are very important characteristics to assess the response to medical treatment. Healing is fast when only epidermis and superficial dermis layers are affected, while it is slower when the lesion compromises glandular culs-de-sac: if the ulcer extends to the deep cellular tissues the destruction of generative layers conditions the growth only from the lesion border. In these cases, evolution is relented in proportion to the ulcer size.

Treatment

Venous Ulcer treatment must complete two phases:
1. Ulcer Healing
2. Cure of the disease.

It is essential to treat infection as well as measures to control edema to achieve ulcer healing. Systemic Antibiotic therapy preceded by culture and sensitivity studies, especially when long term duration of treatment is considered very important. Skin care is of major importance to the end of avoidance of superimposed erysipelas or other infections, which may compromise the local lymphatic system.

Edema will be controlled mainly by means of Manual Lymphatic Drainage and adequate elastic compression hosiery, which will in turn increase venous return velocity and provide an external support to the Superficial System. Locally, within the ulcer, repeated saline or non-ionic fluid wash is recommended. When necrotic areas are present, surgical debridement must be considered.

A good granulation tissue to facilitate the ulcer healing can be obtained by applying the most various types of dressings in the shape of gel, colloids, films, tissues or foams according to determined needs (debridement, epitelization, granulation, etc.). When the ulcer size is important, healing must be eased by free skin grafts, collagen implants polyurethane dressings or biosynthetic membranes. Sclerotherapy in the preoperative period has seldom or no indication. Conversely, postoperatively it may help to maintain a good result with time.

Surgical Treatment

Once venous ulcer has been healed, it is necessary to try to cure the CHRONIC VENOUS INSUFFICIENCY disease, by means of restoring normal physiology. This is achieved by surgery, which will be permanently successful if radical and complete. It must be directed to treat all affected territories (superficial, perforant & deep if possible). Long term postoperative follow up is also essential, as future decompensations can be detected and recurrence avoided with minimal post-surgical complements. Before deciding the operation, one must keep in mind the assessment of the calf venous-muscular pump. In case of atrophy, it should be recovered to reduce edema to its minimal expression. If persistent, edema will allow clinical evaluation of the role of deep venous hypertension and its role in hydro-electrolytic retention. Quantitative Duplex Scan, APG, Phlebomanometry, and Ascending Phlebography will determine the magnitude of the lesion of the Deep Venous System and the potential repair possibilities.

Superficial Venous System

When a Long or Short Saphenous Vein is incompetent, total or partial stripping according to the magnitude of the insufficiency is the most adequate surgical measure over all the conservative techniques and compression sclerotherapy given the high incidence of

recurrence of these two latter procedures. Second and Third order collaterals will be excised by phlebectomy or may be complemented by sclerotherapy.

The Perforant Venous System

When the DVS is normal, direct perforants responsible for the decompensation of the Venous Buffer Circuit must be ligated. Whether the DVS is also affected, complete interruption of perforants is mandatory with ligation of normal perforants as well. With time, these vessels are prone to decompensation and the disease will recur. Nowadays the perforant system can be approached by:

1. Through Open Surgery (modified Linton or Cockett operations).
2. Subfascial Videoscopic Surgery.
3. Echo-assisted Surgery.

1. Open Surgery

Despite a traumatic operation, with a large incision, this technique provides radical benefits when an abnormal DVS Syndrome is present. as it is the only one that permits the ligation of normal perforants thus avoiding long term recurrence. Videoscopic subfascial surgery and echo-assisted procedures have a higher percentage of post-operative recurrence in these cases.

Linton & Cockett operations must be complemented by the sub-malleolous resection of the Lower Anastomotic Arc, the retro-malleolar perforants described by Van Limborg, and the fourth perforant. We do not perform the Superficial Femoris vein ligation (Linton), and avoid the incision on diseased tissues. Subcutaneous tissues section should be done in block so as to facilitate healing. Finally, suture of the fascia must be done to preserve the function of the calf muscular-venous pump.

When this modification is carried out, practically as high as a 14.6% of postoperative recurrence in this localization is eliminated.

2. Videoscopic Surgery

As aforementioned its main indication remains the interruption of the perforant system with normal DVS. Access to gastrocnemious and solear sector is good, as it is to the upper direct & indirect perforants of the leg when not localized within the muscular zone of insertion in the tibial medial border or the superior and medial Cockett perforants. This technique definitely does not allow the approach to the 3rd, la 4th, & the Lower Anastomotic Arc and thus this operation must be completed by open surgery at this level.

Its main advantage is the short size of the incision (3 cm.), which carries a better cosmetic result and a swifter postoperative recovery.

3. Echo-assisted Surgery

This operation consists of perforants ligation performed through 0.5 to 1 cm. incisions, previously marked by duplex scan. If necessary, this diagnostic method may be also used intraoperatively. Similarly to the former, it is not useful in the post-thrombotic syndrome, given that the Duplex does not detect normal perforants. Its main advantage upon Videoscopic Surgery is that the subfascial compartment remains unopened, thus leaving it untouched for a future open operation. Besides, it allows a more complete dissection of superficial vessels collateral to the perforants. It is advisable to close the fascial perforant ring with a stitch after it has been sectioned, to avoid further diagnostic confusion in the postoperative period. Thumb fingertip palpation through the incision of the fascia allows also the detection of smaller caliber perforants. The operation must be completed if necessary with the sub-malleolous approach. The cosmetic result is very good, if intradermal suture of the incisions is carried out.

The Deep Venous System

There is a group of patients with lesion of the DVS, in which venous hypertension continues to act upon the interstitial tissues of the leg, despite restoration of functional independence between the DVS and the Superficial System. In these cases, normal pressure levels must be achieved, to allow the patient to lead a normal lifestyle.

We must keep in mind the following items:

- It is essential to the evolution to count with a fully developed muscular-venous pump.
- Clinical examination is crucial for decision making, especially in the young patient with severe manifestations.
- These features are important:
  a. Venous Claudication, which is similar to that of the arterial patient.
  b. Venous ulcer with an ischemic behavior.

Operation must be considered as soon as possible, mostly if the patient is young, to achieve the best results in terms of prompt recovery without previously damaged connective tissues and skin. Duplex scanning, either qualitative or quantitative, and APG will be able to measure the magnitude of reflux and presume surgical chances. Once intervention is decided, ascending and retrograde phlebography are indispensable not only to assess the reflux or the obstruction quantification, but also to appreciate the potential resources for the reparation. Despite the fact that surgical procedures per-formed on the DVS exceptionally bring a physiologically complete restitution, partial results are usually compatible enough for the patient to lead a normal life.

Valvular insufficiency has an excellent surgical solution by means of valvuloplasties, original techniques developed by Dr. Kistner, which can be carried out either externally or internally; when not feasible, transpositions to the vertical branch of the Profunda Femoris from the Superficial Femoral constitute a very good alternative.

Venous valvulated bypasses with preserved veins allografts are in a developmental stage, with encouraging possibilities.

Palma Operation (1958) is indicated in obstruction or subocclusion of the Iliac and/or high Common Femoral segments, when the organism mechanisms are not enough to compensate venous hypertension, thus expressing by severe symptoms and signs at the level of the leg. Despite this compensatory mechanisms are directed towards the support of other natural bridges developed to overcome the obstructive problem, they are usually not enough. In these cases, patency maintains permanently and the patient experiences a substantial progress. Many other operations on the DVS have been relegated due to their scarce success in the long-term follow-up. In the Phlebo-Arthrosic Syndrome, the surgical consideration remains depending to the recovery of the tibio-tarsal joint mobilization, which rigidity is a characteristic of this Syndrome. Once mobilization is achieved through cinesitherapy, the venous affected systems will be then considered to be treated according to what was previously expressed.

ULTRASOUND GUIDED SCLEROTHERAPY (USGS) FOR PERFORATING VEINS (PV)

J. Jérôme Guex, MD
French Society of Phlebology
Nice, France

The rationale for treating varices and perforating veins is aimed at the three main pathophysiological abnormalities: to reduce venous hypertension, to suppress leak points from the deep to the superficial venous system, and to reduce the varicose volume/length (reservoir).

When to treat specifically perforating veins?

To suppress a varicose pattern that is mainly/solely fed by the PV, to avoid recurrent (persistent) varices after surgery, to heal an ulcer which is not cured by (appropriate) compression alone.

Why not to treat PV (with USGS)?

As an isolated procedure, USGS (like other techniques used for treating PV), does not seem appropriate in case of deep venous obstruction.[1] It has been observed recently that thrombophilia is often associated with thrombotic complications of sclerotherapy,[2] therefore a precise clinical and biologic screening of patients must be defined prior to any treatment of varicose veins. A history of venous thrombosis must be searched for.

When not to treat perforating veins (with USGS)?

The first obvious reason is that when they are competent or too small (<3mm diameter)[3] there is no need for suppressing them.

When they drain a varicose cluster (sometimes called "reentry"), there is a theoretical risk of worsening of the venous hypertension.

For medial leg perforators, when they are associated to an incompetent greater saphenous vein (GSV), 75% of them will become competent after removal of GSV.[4,5]

In all cases, a complete duplex assessment of the venous networks must be carried out before treatment, with the patient standing or sitting for this examination. Reflux duration of > 0.5 sec. indicates incompetence.[6]

Indications for sclerotherapy of PV:

As indicated above, most PV will become competent after stripping of the GSV. Therefore, when not all PV are removed at the operation time, additional sclerotherapy will take care of residual incompetent PV.

Sclerotherapy as a primary treatment of PV is feasible for example to deal with the Dodd & Hunterian perforators, non saphenous networks (for example on the lateral aspect of thigh; Albanese network), incompetent medial leg PV without GSV incompetence, Recurrent Varices After Surgery (REVAS) related to certain cases of PV incompetence (femoral canal for example), recurrent varices after prior USGS or Sclerotherapy. Sclerotherapy of PV in patients with history of DVT is not a routine treatment, but can help to heal venous ulcers.

Criteria for the choice of treatment (USGS vs. SEPS or vs. stab avulsion):

Diameter and duration of reflux should be considered as criteria for decision although there are no data to support this opinion. Veins with a diameter of more than 8 mm are more likely to be resistant to sclerotherapy. Patients should be more enthusiastic for sclerotherapy since the method is ambulatory, cheap and simple.

Techniques of injections:

The usual "blind" sclerotherapy is sometimes possible if the vein has been marked by duplex imaging (if the duplex is not easily available). However, ultrasound guided sclerotherapy provides more safety and accuracy.[7] Duplex will also provide information on the good evolution of the sclerosing reaction on the further examinations (1 week or more).

The sclerosing agents which can be used are Sotradecol 3% or Polidocanol 3%, lower concentrations are advised at the first session if the PV are smaller than 4 mm in diameter, an initial volume of 1 cc at the first session is recommended. Compression of the leg with bandages or medical stockings is mandatory.

There is a lack of evidence regarding the results of the technique, further studies must be carried out.

Based on one short-term study[8] and on our own experience, we estimate that a primary occlusion is obtained in about 90 % of cases with 3 or less sessions. Regarding long-term results, no controlled study and no data on recurrence rate are available.

Criteria of assessment for future studies should include: duplex-visible sclerosis of the vein, pre and post therapeutic diameter and reflux duration, and plethysmographic evaluations as well.

The convenience of the technique and its overall price (calculated on a long-term follow-up, estimated with a life-long treatment) must be taken in account.[9]

Some of the potential complications of the techniques are non-specific to sclerotherapy of PV, such as thrombosis, necrosis and allergy. Edema and bulge of lipodermatosclerosis are more specific. These latter complications are more frequently observed in patients graded C3 and higher. They are decreased by an adequate compression.

Pros & Cons of sclerotherapy of PV represent a good summary of the method:

Pros: Cheap, repeatable, painless and versatile.
Cons: Technically challenging, possible complications, no data on long term results.

References

1. Gloviczki P, Bergan JJ, Rhodes JM, Canton LG, Hamsen S, Ilstrup DM, et al. Mid-term results of endoscopic perforator interruption for chronic venous insufficiency: Lessons learnt from North American subfascial endoscopic perforator surgery registry, *J Vasc Surg.* 1999;29:489-502.
2. Conrad J, et al. Thromoses veieuses apres slerotherapie. Enquete clinico biologique a propos de 42 observations. In: Abstract: College Francais de Pathologie Vasculaire, Paris, March 1999, *J Mal Vasc.* 1999;24(suppl. A):95.
3. Labropoulos N, Delis K, Nicolaides AN, Leon M, Ramasmami, Volteas N. The role of the distribution and anatomical extent of reflux in the development of signs and symptoms in chronic venous insufficiency, *J Vasc Surg.* 1996;23:504-510.
4. Stuart WP, Ruckley CV, Adam DI, Allan PL, Bradbury AW. Saphenous surgery does not correct perforator incompetence in the presence of superficial or deep reflux, *J Vasc Surg.* 1998;28:834-838.
5. Campbell WA, West A. Duplex ultrasound audit of operative treatment of primary varicose veins, *Phlebology.* 1995;Suppl 1:407-409.
6. LaRoche JP Guex JJ, Coupe M, Dauzat M, Janbon C. Exploration par echo-doppler des perforantes jambideres, *Phlebologie.* 1997; 50(4):669-677.
7. Schadeck M. Sclerotherapie des perforantes jambieres, *Phlebologie.* 1997;50(4):683-668.

8. Thibault PK, et al. Recurrent varicose veins. Part 2: injection of incompetent perforating veins using ultrasound guidance, *J Dermatol Surg Oncol.* 1992;18(10): 895-900.
9. Guex JJ, Isaacs MN. Comparisons of Surgery and Ultrasound Guided Sclerotherapy (USGS) for the treatment of incompetent and varicose saphenous veins: must criteria of assessment be the same? (submitted: *International Angiology*).

CASE OF PERFORATOR INCOMPETENCE

Paul R. Cordts, LTC, MC
Tripler Army Medical Center
Honolulu, Hawaii, USA

This is a 65-year old woman with severe recurrent venous ulcerations of the left and right legs since May 1989. She has a history of bilateral DVT 20 years ago. The patient underwent left greater saphenous vein stripping in 1978 and 1985. She has normal pedal pulses.

Level 1: There is a 10x4 cm superficial ulceration above the left medial malleolus with moderate surrounding lipodermatosclerosis. No remarkable edema.

Level 2: Duplex scanning of the left leg (May 1989) showed absence of the greater saphenous vein. The common femoral and profunda femoris veins were patent and competent. There was partial recanalization of the superficial femoral and popliteal veins. The posterior tibial vein was also recanalized. No perforating veins were identified. Duplex scan Sep 1997: left superficial femoral and popliteal veins patent but partially compressible, posterior tibial vein incompetent, lesser saphenous vein incompetent, two incompetent perforators medial calf. APG Sep 1997: OF 16%, VV 68 ml, VFI 5.1 ml/sec, EF 65%, RVF 44.1%.

Level 3: Descending venography reveals valvular incompetence in the common femoral and proximal superficial femoral veins; contrast flows retrograde to the level of mid-superficial femoral vein. Lymphoscintigraphy: no abnormality left lower extremity.

Duplex Mar 1998: no change from Sep 1997. Three incompetent perforating veins medial calf.

CEAP Classification: C6s; Es; As,p,d; Po

Treatment?
(see figures 1-2, on p. 264)

DISCUSSION

DR. O'DONNELL: I do have a little problem with the use of the eponym "Cockett" for these operations. Cockett, as you know, originally described an extrafascial approach to perforators and reserved the subfascial approach for severe dense lipodermatosclerosis with ulcer. Actually, Dodd, Cockett's co-author of their classic text, abandoned the extrafascial approach very early on his experience because of wound complications. In addition he moved the incision postero-laterally. So what you call Cockett is not what Cockett himself described.

DR. O'DONNELL: This is a very interesting case, certainly not one of straightforward perforator incompetence in that there seems to be an element of deep venous obstruction. Our panel had very interesting responses. I question you, gentlemen and ladies, can you provide any evidence that doing something to the perforating veins is going to make this patient better? I would submit that no one in the audience can show in a case like this that the hemodynamics improve. Indeed, most of the data in the literature shows no hemodynamic improvement in patients with post-thrombotic syndrome following interruption of the perforators. Going back to some of the early studies by our Scandinavian colleagues - occlusion of a perforating vein and measurements with electric magnetic flow meters and venous pressures showed no improvement in hemodynamics. And our own work confirms the same. Therefore, I find it very interesting in this case that we're going to treat the perforators alone, but I don't know to what end. Let me open it up to the panel after these "prejudicial" statements. Peter, from your North American SEPS Registry study you have a one in two chance at least with a short-term follow-up of having a satisfactory result i.e., -no ulcer recurrence, in this case if you interrupt the perforators; right?

DR. GLOVICZKI: Well, this is a difficult case, and I seldom perform perforator ligation in a patient with deep vein obstruction or with an element of deep vein obstruction. In this patient obstruction has been confirmed by APG studies. Unfortunately, we do not have an adequate evaluation of this patient. Ultimately, I think that I am going to suggest SEPS, but I would probably make another attempt of an ascending venography. I think an ascending venography in this patient would be quite critical.

DR. O'DONNELL: Why don't you show the ascending phlebogram that you did do, Paul - after the procedure?

DR. GLOVICZKI: You should have done the ascending venogram before the procedure.

DR. DEPALMA: One question that I missed completely is the status of the lesser saphenous.

DR. CORDTS: The lesser saphenous vein was incompetent

DR. DEPALMA: It was incompetent. Okay. That's important because the lesser saphenous gives an Achillean perforator as it crosses the tendon initially to Cockett I. That is what Dr. Enrici's arcade shows as he dissects. I think that it's very important to deal with that inflow problem as well as interrupting perforators from above.

DR. O'DONNELL: Ralph, how do you deal with the incompetent lesser saphenous? Do you strip it out? Do you ligate it? What do you do?

DR. DEPALMA: Well, I think all of the action is down at the lower end, and I would divide it. I would ligate it and then just put the small skin incision out of the area of involvement and then come down directly on the Cockett I, ligate that, remove the Achillean communication. Then I elevate the skin around it and then dress the dissected area firmly and keep the limb elevated.

DR. GLOVICZKI: I like invagination stripping of the lesser saphenous vein. I think it is nontraumatic and it preserves the sural nerve. These are frequently perforator veins connecting the lesser saphenous vein to the deep veins, so stripping is a better operation than ligation only.

DR. NEGLEN: I would like to turn this case around. If I understood it right, you had axial reflux in the superficial femoral vein that was patent and partially recanalized. So if we forget the perforators and then look at axial reflux in the deep system in a limb with stripping of the saphenous vein already performed, reflux flow

on the APG as high as 5.1 ml/s is sort of high for perforator incompetence, even with the popliteal vein incompetence. That's the first point. The other point is that I would also be very interested in looking at the iliac vein and agree with Dr. DePalma, since the outflow fraction is only 16 percent. Although I don't trust the measurement of outflow fraction per se, 16 percent is very low and probably positive for obstruction. So I would say, isn't this a case of axial deep vein reflux with outflow obstruction, although I don't know where the obstruction is?

DR. CORDTS: The obstructive changes were in the superficial femoral vein and popliteal veins. The iliac veins looked normal by venography.

DR. NEGLEN: Completely normal by venography? Then I would suggest you perform a valvuloplasty of some sort of the superficial femoral vein, which would probably lead to a better result than a SEPS.

DR. O'DONNELL: What would the panel say to that? That would be my conclusion, but I'm glad you stated it. Treating the perforators alone at least hemodynamically does nothing.

DR. DALSING: In this case, I'm more concerned that the obstruction is important. Even if you couldn't obtain an ascending venogram, I think something like a magnetic resonance venogram, may be possible. This would allow you to look at the anatomy in some way. I am worried about the obstruction. I'm not so sure that putting a valve in this system to prevent reflux is going to take care of an APG of 16 percent. I don't think I've even seen a false positive APG to that degree. Yes, I have seen false negatives, but not a false positive. These are the things that I'm concerned about when considering this case.

DR. KISTNER: I thought you said that the reflux only went to the lower thigh and not down into the popliteal. Am I wrong?

DR. CORDTS: Reflux to the lower thigh on the descending venogram but then on duplex scan subsequent to that it went down more distal than that into the popliteal vein and the lesser saphenous vein.

DR. KISTNER: And how did it get there?

DR. CORDTS: It got there through the superficial femoral veins. Those studies were done at different times.

DR. DALSING: Was that an obstruction or a valve present there?

DR. CORDTS: An obstruction in the superficial femoral vein.

DR. KISTNER: Did you consider this a problem of reflux or a problem of obstruction? Could you separate those, or was it both?

DR. CORDTS: Initially obstruction and later reflux, later both.

DR. KISTNER: I don't see repairing the reflux unless you could demonstrate that it has significant volume.

DR. NEGLEN: Bob, is it occlusion and is it recanalization and to what degree do we have the lumen? I can understand the hesitancy of doing a valvuloplasty above an occlusion, but we'd really like to see those venograms.

DR. KISTNER: If there's significant reflux it should be eliminated. It could either be by putting a valve or by ligating the SFV.

DR. DEPALMA: If I can make a comment here, 30 cc's of dye is worth three opinions. I'm used to looking at arteriograms and venograms. I'm not so smart in guessing at ultrasound or physical examination. We've had this discussion about the use of duplex scans to do operations, and in the recalcitrant group of patients the venous system is pretty complicated. Here's Sherman's depiction of the saphenous and branches published in the 1950's. We tend to forget how complicated the superficial system is and how many branches there are. If you can figure that out on duplex, especially when the skin is thick and a big ulcer exists, I don't know how do it. I think this is the usual end result of surgery rather than conservative therapy. I have had a problem correlating our duplex scans, which are wrong about 30 percent of the time, in making operative decisions. This case is a perfect example of that. In this case the surgeon has left the saphenous behind along with missed perforators. I repeat again that 30 cc's of dye is always worth three opinions.

DR. O'DONNELL: I would agree that when you get a complex venous case that duplex alone is insufficient. It's our routine to get ascending and descending phlebograms, particularly in a patient with an ulcer.

DR. KISTNER: Certainly I'd have ascending and descending venography to map out everything in the leg. It looks like there's a good chance that the superficial femoral vein is contributing reflux, and I'd eliminate that, probably repair it, and if I couldn't repair it I'd probably ligate it. I'm not clear what's going on in the profunda femoral vein, and I think you need a descending venogram to find out what the flow patterns are. So often you find a different flow pattern with descending venography than you do with ascending venography, and if you add the two together and throw in the duplex, you get a picture. So I would analyze this case more completely, and fix what I could fix. I guess that reflux is the key more than obstruction.

DR. RAJU: I would totally agree with what Bob said. I mean, it's clear that the superficial femoral vein is ten times as large as any perforator we saw, and I think it would be a mistake to focus on the perforators. Dr. Gloviczki has been presenting data in the last few days in this very meeting saying that one-year recurrence is about 35 or 30 percent, in post-thrombotic syndrome is it not, Peter?

DR. GLOVICZKI: The two-year data was 46 percent, but that had a large percent of standard error because we didn't follow too many patients up to 2 years. Post-thrombotic patients do the worst.

DR. RAJU : So you have already done SEPS.

DR. GLOVICZKI: You have not. You did a sham operation.

DR. RAJU: It has already failed, and you have shown persistence, or new formation, of perforators. You saw some other unnamed saphenous branch taking in a perforator up in the thigh. I think it has been shown in the venous system that you cannot disconnect and isolate the superficial or some part of the venous system from the other permanently. This has been amply shown in the portal circulation. Warren operation is based on that. It works for four or five years. After that you get reconnection. That should be the time for SEPS. I think all the disconnecting operations are going to be temporary. Preliminary SEPS data shows the recurrence to be high in post-thrombotic cases. The superficial femoral vein is large in this case. There is massive reflux, and I do not understand the hesitancy to go and fix that reflux.

DR. O'DONNELL: Peter, would you comment? You said a sham operation. Is that because the lamina profunda was not incised in the posterior compartment?

DR. GLOVICZKI: I was joking. It was not a sham operation. It was just not a complete operation and that was obvious. In such a short time those large perforators don't just show up. I mean, obviously if the deep posterior compartment was not entered,

several important perforators were missed. So it was an incomplete operation. This patient has severe post-thrombotic reflux and obstruction. I would start out with a redo SEPS, but I don't debate that this patient will ultimately really benefit from a good operation to correct the deep reflux. The debate could be whether it's femoral ligation as Bob suggests, or something else. The question is if the valve is not reparable would you do an axillary vein valve transplant or would you, in a patient like this, put in a cryopreserved vein valve that has a 60 percent thrombosis at six months.

DR. PERRIN: I think the ulcers recurred after SEPS. I would propose ultra-sound guided technique for the perforators. That's the first thing. If that does not work, I would probably redo SEPS.

DR. O'DONNELL: You wouldn't treat the deep system?

DR. PERRIN: No.

DR. DALSING: I guess I would approach the deep system and try to repair it, like Bob says. The actual six-month patency rate for cryopreserved vein valves is probably in the 60 percent range, not the 40 percent patency rate suggested by Peter.

DR. KISTNER: If that profunda system is patent and competent, it's a different ballgame than if it's diseased or absent. So you've got to find that out because that tells you whether it's worthwhile to fix the superficial femoral system, I think.

DR. NEGLEN: I think this is very important what Bob said. We still don't know enough about the axial reflux. Seeing the films I got a feeling there is a sort of profunda transformation and maybe it wasn't the main superficial femoral vein we saw. The second point I want to return to is the low outflow fraction and the suspicion of outflow obstruction. I think this patient needs a trans femoral venogram which clearly shows the iliac segment. This segment can't be assessed in this film although it appears normal. I agree with Dr. Dalsing that 16 percent outflow fraction is very low and it's rare to have false positive findings of that magnitude. There is something cooking up there.

DR. DALSING: When you did your descending venogram did they look at the iliac when they went down?

DR. CORDTS: Yes.

DR. DALSING: And was it normal then?

DR. CORDTS: Yes.

DR. O'DONNELL: I personally would get a complete venogram and do an arm-foot vein pressure study to determine the elements of obstruction.

SURGICAL MANAGEMENT

DR. CORDTS: Let me show you what we did first. In March of '98 we did a SEPS. We did a SEPS using the standard techniques that have been described. We identified three incompetent perforating veins by duplex scan and marked them pre-operatively. Then we identified those, clipped them and divided them. We did not open the deep posterior space. Then we exposed the lesser saphenous vein at the saphenopopliteal junction and tried to but couldn't pass the PIN stripper. So we treated the lesser saphenous vein by ligation and division since we could not strip the lesser saphenous vein. Over the next few months she showed improvement but three small venous ulcers remained. In August 1999, a year and a half later, the ulcers had never healed. We did a duplex scan which showed the common femoral vein and popliteal vein were incompetent. The tibial veins

Figure 1.– Ascending venogram left calf, oblique view. Venogram demonstrates two residual incompetent perforating veins medial calf (white arrows). Clips from prior SEPS procedures are noted in more distal calf.

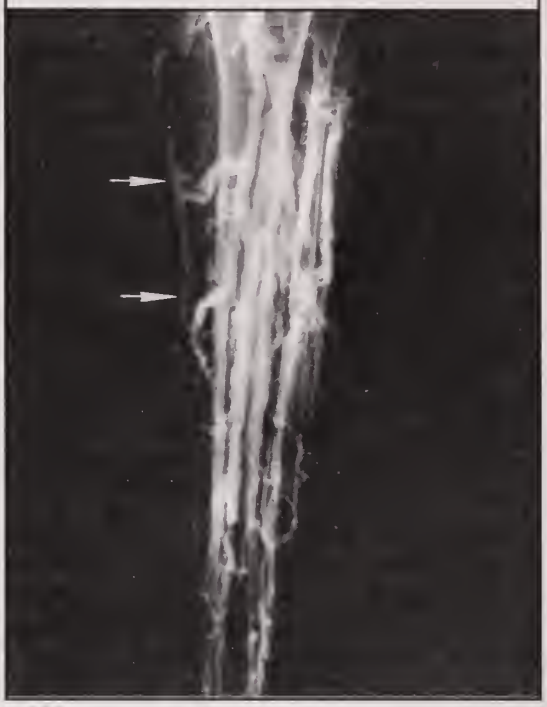


Figure 2.– Ascending venogram left leg, lateral view. Venogram demonstrates multiple incompetent thigh perforating veins (white arrows) filling superficial varicosities. Post-thrombotic changes of distal superficial femoral vein are noted.



appeared competent, and we identified three incompetent perforating veins. This is a year and a half after SEPS. We then did an ascending venogram. We were able to identify three incompetent perforators (Fig. 1). You can see the clips from the SEPS, and you can see that one of those perforators communicates with an incompetent segment of the greater saphenous vein below the knee. So that's not good. There were recanalization changes of the superficial femoral vein (Fig. 2), and an incompetent perforator in the thigh are seen. Then as you come up in the groin here we identify some portion of the profunda, and the remainder of the iliac veins appear to be normal. So we identified three incompetent perforators in the calf, at least one incompetent perforator in the thigh, and recanalization changes of the superficial femoral vein. We haven't done anything further at this point.

III. PRIMARY VENOUS DISEASE: DEEP AND SUPERFICIAL REFLUX

TREATMENT OF PRIMARY VENOUS INSUFFICIENCY

Robert L. Kistner, MD
Straub Clinic & Hospital
Honolulu, Hawaii, USA

Recognition that a chronic venous problem is due solely to primary venous insufficiency (PVI) defines that the entire problem is due to reflux in the veins, and that obstruction is absent. PVI cases can present with exactly the same clinical appearance as post-thrombotic cases, but the treatment implications are quite different because the venous system is entirely patent and the luminal surfaces of the veins are normal. Successful treatment is possible by surgical means in all segments of the lower extremity veins afflicted with PVI, including superficial (saphenous), perforator, and deep veins, and the results in all of these divisions of the venous tree are highly favorable.

PVI has distinctive histologic findings that have been published in the past but are not frequently appreciated. The findings in the endothelial layer consist of hyperplasia, which produces the white streaks often seen on the luminal surface of the opened vein. The real pathology is in the subendothelial and medial layers where the most striking change is an increase of the collagen which appears to become aggressive by wrapping around muscle bundles and actually fragmenting the syncitial continuity of the muscles in PVI. This is accompanied by fragmentation of elastic layers and areas of either hyper- or hypoplasia of the muscular layers. This process logically results in dilation of the venous wall, and dilation of the wall leads to valve incompetence.

The striking difference between primary and secondary disease is that the signs of prior acute thrombosis and inflammation or hemorrhage seen in post-thrombotic disease are absent in primary disease. These signs are hemosiderin deposition, neovascularization in the old thrombus and in the vein wall, and leukocyte infiltration of the wall.

The gross changes of PVI are strikingly different than those found in post-thrombotic disease (PTD). In PVI, the lumen is smooth and the wall is pliant and of relatively normal thickness. Valve sites are fewer in the saphenous vein of PVI than in the normal state, probably due to atrophy and ultimate disappearance. All stages of atrophy of valve cusps can be seen in these veins. In the deep veins, the valve cusps are normal in appearance, but are stretched and elongated. These findings are strikingly different than in post-thrombotic veins where the luminal surface is irregular, contains synechiae and random webs, and sometimes endoluminal masses are present. The valves are disfigured, scarred, and often entirely destroyed. The wall is thickened, non-pliant, and there is usually a peri-phlebitis with adhesions to surrounding tissues.

Given these differences, it is not surprising that there are excellent opportunities for surgical repair in PVI and little reason for limiting treatment to external support and change of life-style in the otherwise healthy person. With care in diagnosis, and adherence to the CEAP requirements for definition of the etiologic basis for the clinical problem between primary, secondary, and congenital causes, and the pathogenetic mechanisms of reflux and obstruction segment by segment, opportunities for correction of the abnormal physiology abound in primary disease.

Treatment of superficial primary disease in the saphenous system, and of the perforator veins, is widely practiced and is all that is needed in 30-50% of the cases of ulceration, and in the vast majority of non-ulcer cases. The deep system is implicated in 60%+ of primary ulcer cases, and requires surgical repair in a so-far unknown percentage of these to provide long-term relief of the Class 4, 5, and 6 problems. The long-term success of valve repair, coupled with control of saphenous and perforator incompetence in PVI cases of classes 4, 5, and 6 up to 4 years and beyond, is well-demonstrated in the literature to fall in the range of 65-80% in every published series of significant size.

Given the present ability to diagnose primary venous disease accurately and by non-invasive affordable tests, the appropriate management of all primary disease should be by surgical correction in the active patient. This includes saphenous, perforator, and deep vein correction. The major question is to define which patients do, and which patients do not, require correction in the deep veins to provide a long-lasting favorable result. The answer to this will require comparative prospective treatment groups.

(Scientific Articles continue on next page)

THE ROLE OF ANGIOSCOPIC VALVE REPAIR FOR PRIMARY VALVE INCOMPETENCE (PVI)

Thomas F. O'Donnell, Jr., MD
New England Medical Center
Boston, Massachusetts, USA

The treatment of deep venous valvular reflux for advanced chronic venous insufficiency (CVI) has been cyclical in nature. During the late 1960s and early 1970s there was enthusiasm for ablation of the superficial venous system – saphenous and its branches as well as perforating veins, as the sole management for venous ulcer with deep venous reflux.[1] Both the ulcer recurrence rate and wound morbidity associated with this approach dampened interest in the treatment of venous ulcer by superficial venous system ablation alone.[2] Direct deep venous reconstruction pioneered by Kistner[3] sparked interest in the later approach. Recently, minimally invasive surgery for treatment of incompetent perforating veins (SEPS) however, has refocused the treatment strategy for grade IV through VI CVI back on superficial ablation rather than deep venous reconstruction due to the low wound morbidity rate of the former. The important work of Gloviczki and his North American SEPS Registry has shown that superficial venous ablation works better in patients with primary valvular incompetence than those with a post-thrombotic etiology for their deep venous reflux.[4] This data suggests that a staged approach to deep venous reflux due to primary valvular incompetence is the appropriate strategy. Although primary valvular incompetence has traditionally been related to a fibro-elastic degeneration of the valve with resultant valvular insufficiency,[3] there is increasing evidence that volume overload from a capacious varicose superficial system can cause dilation of the deep venous system and secondary deep venous valvular incompetence.[5] The valves in this situation are intact, but the dilation of the venous annulus prevents them from appropriately coapting. Superficial system surgery which removes the volume overload has shown to restore both normal venous diameter and valve competence. It has been our approach to treat the incompetent superficial venous system first in patients with primary valvular incompetence and restrict direct deep venous reconstruction to those patients who fail this therapy.

One of the hosts of this conference, Dr. Robert Kistner, was the first surgeon to describe a direct approach to rendering a valve competent rather than replacing the incompetent segment with competent valve "borrowed" from either a local or distant venous segment.[3] His initial report in 1968 stimulated interest in the surgical repair of primary valvular incompetence.[6] Our case report will detail the diagnosis, surgical technique and postoperative results of surgery for primary valvular incompetence.

Diagnostic Methods

Clinical Examination: Patients with deep venous valvular reflux characteristically have pain, which is described as a heaviness rather than the intense bursting pain experienced by patients with deep venous obstruction.[7] The pain or heaviness develops upon rising from bed and worsens after prolonged standing. Calf heaviness occurs irrespective of whether the patient is walking which is in distinct contrast to the situation with obstructive venous disease and venous claudication. Edema is a constant finding in patients with deep venous reflux and is of a mild to moderate degree. Cutaneous sequelae, lipodermatosclerosis and pigmentary changes occur frequently in these patients in association with incompetent perforating veins. In our experience, the skin changes may not be as severe as those encountered in patients with post-thrombotic syndrome.

Noninvasive Assessment of Venous Reflux: Duplex scanning is our preferred diagnostic study, because it answers several questions: 1) What is the pathologic process in the deep venous system, 2) what levels are involved, and 3) who are surgical candidates based on the degree of reflux? Quantitative evaluation of venous valvular reflux is performed by the technique described by van Bemmelen. While color flow analysis provides qualitative determination of deep venous valvular reflux, spectral analysis is recorded to quantify the degree of reflux by duration.

Air plethysmography provides hemodynamic information on deep venous valvular incompetence. The venous filling index (VFI) relates directly to the degree of venous reflux and is independent of the venous volume reservoir. Christopolous[8] as well as our vascular laboratory[9] have shown that patients with popliteal vein reflux in stage IV – CVI have VFIs in the range from 7 – 28 ml/seconds versus the normal 2 ml/seconds. We per-form both of these noninvasive studies prior to consideration for valve reconstruction as well as employing it as a method for documenting hemodynamic results postoperatively. In a prospective trial comparing quantitative duplex scanning and air plethysmography to the gold standard of descending phlebography in patients with stage V/VI chronic venous insufficiency, we demonstrated that the combination of valve closure times at the superficial femoral and popliteal vein levels accurately discriminated mild from severe reflux with a sensitivity of 90% and a specificity of 94%.[9]

Phlebography: In all surgical candidates, ascending phlebography is performed with multiple tourniquets to maximize visualization of the deep system.[7] With the superficial system occluded the contrast material is injected by hand forcefully into a foot vein. In addition to indicating the presence and level of incompetent perforating vein, valve sites may be seen in the superficial femoral vein. The diameter of the veins helps distinguish relative deep venous valvular insufficiency from true PVI.

Descending phlebography is then performed under fluoroscopy with the patient on a 75 degree tilt table. The contrast material is hand injected while the patient performs a Valsalva maneuver. Reflux of contrast material is followed by fluoroscopy and cut films are taken. As it slips past, the contrast material usually will outline the valve structure much as frost on a windowpane.

Surgical Procedure: The common femoral, superficial femoral, profunda femoris, and greater saphenous veins (if the latter is present) are approached through a longitudinal incision placed over the common femoral vein. Raju and Fredericks[10] prefer to perform the dissection with a scalpel rather than with scissors in order to avoid venospasm. As opposed to veins that have been involved by a previous episode of thrombophlebitis, the veins of a patient with

PVI usually do not have the intense perivenous scarring unique to post-thrombotic veins. The various branches of the major veins are ligated so that approximately 4 cm of superficial femoral vein is isolated. The proximal valve is identified by its characteristic bulge in the upper superficial femoral vein. The vein is then milked of blood to test its competence. An incompetent valve will permit blood flow down to the clamp placed distal to the valve. Following heparinization, soft, noncrushing clamps are placed on the common femoral, profunda femoris, and superficial femoral veins below the valve.

There are three open approaches to exposure of the valve commissure. Kistner originally described a longitudinal venotomy,[3] while Raju advocated a transverse venotomy placed above the valve.[10] Finally, Sottiurai used a combination of a transverse and longitudinal venotomy.[11] We, however, prefer the closed angioscopic technique first described by Gloviczki.[12]

Angioscopic Technique: Fourteen patients have undergone angioscopic evaluation of the valve before and after repair. The scope is inserted through a large tributary of the proximal greater saphenous vein which was invariably absent or via a branch of the femoral vein down into the superficial femoral vein.[13] Saline solution is infused through the angioscope, and the valve leaflets are observed for incompetence, which, when present, is both obvious and dramatic. The pathology of PVI usually demonstrates a wispy gossamer-like valve with redundant valve margins.

The Closed Angioscopic Valve Repair Technique: After placing two or three 7-0 monofilamant sutures on each side of the valve from outside the vein under angioscopic guidance, the repair was tested for competence by infusing saline solution through the scope. Common to the patients who have undergone angioscopy is the use of the angioscope to judge the competence of the repair rather than the strip test. If the valves are incompetent, additional sutures are added. By contrast, if the repair is narrowed sutures may be removed.

Results: Table I demonstrates the preoperative demographics for seven series in the literature which total 254 limbs. All series except ours were carried out by the open technique. The indication for surgery varied but averaged 75% for stage V/VI disease. Kistner's[14] series has the longest follow-up period. In general patients do quite well regarding ulcer recurrence with rates varying from 35% to 19%. Several series such as Kistner's and the recent one of Perrin[15] show that valvular incompetence is related to the duration of ulcer-free survival. The value of angioscopic repair of primary valvular incompetence lies in the determination while in the operating room that the repair is competent. In the absence of further valvular degeneration in the postoperative period, this finding should be correlated with a good outcome.

References

1. O'Donnell TF, Shepard AD. Chronic venous insufficiency. In: Jarrett F, Hirsch J, Eds. *Vascular surgery of the lower extremities.* St. Louis: CV Mosby, 1985:206-38.
2. Burnand KG, O'Donnell TF, Lea Thomas M, Browse NL. The relative importance of incompetent communicating veins in the production of varicose veins and venous ulcers, *Surgery.* 1977;82:9-14.
3. Kistner R. Surgical repair of the incompetent femoral vein valve, *Arch Surg.* 1975;110:1336-1342.
4. Gloviczki P, Bergan JJ, Rhodes JM, Canton LG, Harmsen S, Ilstrup D. Mid-term results of endoscopic perforator vein interruption for chronic venous insufficiency: lessons learned from the North American Subfascial Endoscopic Perforator Surgery registry, *J Vasc Surg.* 1999;29:489-502.
5. Eriksson E. Plethysmographic studies of venous diseases of the leg, *Acta Chir Scand.* 1969;(suppl 398).
6. Kistner R. Surgical repair of a venous valve, *Straub Clin Proc.* 1968;34:41-43.
7. O'Donnell TF. Surgical management of deep venous valvular incompetence. In: Rutherford RB, ed. *Vascular Surgery.* 3rd ed. Philadelphia: WB Saunders, 1989; 1612-26.
8. Christopoulos DG, Nicolaides AN, Szendro G, Irvine AT, et al. Air plethysmography and the effect of elastic compression on venous hemodynamics of the leg, *J Vasc Surg.* 1987;5:148-59.
9. Welch HJ, Faliakou EC, McLaughlin RL, et al. Comparison of descending phlebography with quantitative photoplethysmography, air plethysmography, and duplex quantitative valve closure time in assessing deep venous reflux, *J Vasc Surg.* 1992;16:913-20.
10. Raju S, Fredericks R. Valve reconstruction procedures for non-obstructive venous insufficiency: rationale, techniques, and results in 107 procedures with 2-8 year follow-up, *J Vasc Surg.* 1988;7:301-10.
11. Sottiurai VS. Surgical correction of recurrent venous ulcer, *J Cardiovasc Surg.* 1991;32:104-9.
12. Gloviczki P, Merrell SW, Bower TC, Femoral vein valve repair under direct vision without venotomy: a modified technique with use of angioscopy, *J Vasc Surg.* 1991;14: 645-8.
13. Welch HJ, McLaughlin RL, O'Donnell TF. Femoral vein valvuloplasty: intraoperative angioscopic evaluation and hemodynamic improvement, *J Vasc Surg.* 1992; 16:694-700.
14. Masuda EM, Kistner RL. Long term results of venous valve reconstruction: a four-to twenty-one-year follow-up, *J Vasc Surg.* 1994: 19:391-403.
15. Perrin M, Hiltbrand B, Bayon JM. Results of valvuloplasty in patients presenting deep venous insufficiency and recurring ulceration, *Ann Vasc Surg.* 1999; 13:524-532.
16. Eriksson I. Vein valve surgery for deep valvular incompetence. In: *Controversies in the management of venous disorder,* Eklof, Gjores, Thulesius, Berquist, EDS. Butterworths: London, 1989.
17. Simkin R, Esteban JC, Bulloj R. By-pass veno-venosos y valvuloplastas en el tratamiento quirurgico del sindrome post-trombotico, Angiologia. 1988;1:30-4.

Table 1.– Summary of Preoperative Demographics for the Surgical Treatment of Primary Valvular Incompetence by Valvuloplasty

Preoperative Demographics

Series	Country	Institution	Year	#Limbs	Indicat (% ulcers)	Technique
Kistner[14]	USA	Straub Clinic	1992	51 (48 pts)	57%	Open ± Perfs
Raju[10]	USA	Mississippi	1987	107 (42 pts)	71%	Open ± SFJ lig
Perrin[15]	France	Clinique Grand Large	1999	52 33 (28 pts)	100%	Open ± Perfs
Eriksson[16]	Sweden	Uppsala Univ Hosp	1989	22 (20 pts)	?? %	Open ± Perfs
Sottiurai[11]	USA	L.S.U.	1987	20 (12 pts)	100%	Open
Simkin[17]	Argentina	Clinica Quintana	1988	7 (7 pts)	100%	Open (3) Plication (4)
O'Donnell	USA	NEMC	1992	14 (14 pts)	100%	14 open

Table 2.– Summary of Postoperative Results for the Surgical Treatment of Primary Valvular Incompetence by Valvuloplasty

		Postoperative Results			
Series	Follow-up(mos)		Imaging	Hemodynam	Clinical Results
Kistner	48-252 (108)	86%	67% (PVI)	60%	35% ulcer
Raju	24-96			85% 1 year 75% 2 years 63% 3 years	7% DVT 5% bleed 5% infec
Perrin	24-96 (58 months)	85%	68%		19.2% ulcer recurrence 77.8% ulcer free survival
Eriksson	6-84		100%	64% 6 mos 62% 84 mos	30% ulcer
Sottiurai	10-73			80%	?
Simkin	??			50%	
O'Donnell	12-62			100%	85% remain healed

Range of follow, as well as (mean follow-up). Imaging refers to the percent of patients who were free of reflux on phlebography or duplex.
Hemodynamics refers to the percent of patients who had normalization of their APG or VRT#.
*Angioscopically guided valvuloplasty

INTERNAL VALVULOPLASTY

Michel Perrin, MD
University de Grenoble
Grenoble, France

In case of primary deep venous reflux and when deep venous reconstructive surgery is planned internal valvuloplasty looks to be in our experience the recommended surgical procedure.

The rationale for recommending Internal Valvuloplasty (IV): First of all because other techniques have not yet provided long term results as good as IV.

-Valve transfer (transposition, transplantation) has been mostly used to treat secondary deep vein reflux and generally their results are not as satisfactory as those obtained by IV (Perrin, Raju, Sottiurai).

-Psathakis operation II had given excellent results to his promoter but disappointing in small series reported by others (Perrin, Scurr).

-Several authors (Belcaro, Lane, Raju, and Schanzer) had performed external wrapping (Veno-cuff, banding with Gore-Tex or Dacron sleeve). Results are difficult to assess as various materials and techniques had been used, indications were different according to authors and long-term results are not available. Furthermore, I cannot clearly understand how shrinking of the vein diameter may work to correct reflux when the free borders of the valve are elongated and already in contact.

-Plagnol and Raju had used neovalve. The former had reported only mid-term results (average 18 month) in 44 extremities including 32-graded C6. Ulcer had recurred in 3/32(9.4%) and hemodynamic failure in 6 /44(13.6%).

-Hoshino, Kistner, Gloviczki, O'Donnell and Raju had used external valve repair, but again we have only short- or mid-term results. The advantages of the external valvuloplasty (EV) compared to IV are: EV is quicker than IV, allowing multivalve repair and avoids phlebotomy. In our unit we have only performed EV in addition to IV at the popliteal level without using angioscopy. Angioscopy is certainly very helpful as recommended by Gloviczki, Hoshino, and O'Donnell. I would add that in EV, the vein needs to be peeled off, and that might be detrimental to the vein wall vascularization.

-Internal Valvuloplasty: Kistner, Raju, and Sottiurai have described three techniques. We used the latter with minor modifications because it seems easier to perform valve repair through the T-shaped phlebotomy.

The ideal site for performing valvuloplasty is still under discussion: Sottiurai recommends popliteal level and Raju termination of the superficial femoral vein. In our series the latter has been chosen.

One of the potential hazards in IV is postoperative thrombosis. All our patients have had a postoperative ascending phlebography (24 to 36 hr. after surgery) to assess this complication. In IV (#65) for primary vein reflux we have recorded 5 (7.6%) limited thrombosis in situ or distal to the valve repair. Our results are summarized in Tables I, II, III, and IV. Table V displays results gathered through the published literature. Until updated data on others' techniques with long follow-up results assessment will be presented, IV seems the more reliable surgical technique to correct deep venous reflux.

Table 1

MATERIAL AND METHODS

1988 - 1997 — 85 extremities treated by Valvuloplasty

65 for PVI — Group I
19 for PVI (?) + PTS (distal) — Group II
1 for KT

Table 2

MATERIAL AND METHODS

1988 – 1997 — 85 lower limbs treated by valvuloplasty

35 for C5 - C6 (41.2 %)
Follow-up : 12 - 96 m
(average 64)

Table 3

VALVULOPLASTY for ULCER (C5 - C6)

Clinical Results

(Nb of extremities)	Ulcer Recurrence (%)	Non Healed (%)
Group I (24)	3/24 (12)	1/24 (4.1)
Group II (10)	5/10 (50)	1/10 (10)

P=0.03 (exact Fisher Test)

Table 4

VALVULOPLASTY for ULCER (C5 - C6)

Hemodynamic Results

(Nb of extremities)	No or minor Reflux	Major reflux (%)
Group I (24)	18	6 (25)
Group II (10)	4	6 (60)

P=0.05 (exact Fisher Test)

Table 5.– Internal Valvuloplasty Results

	No Limbs (# Valve Repaired)	Etiol. PVI	Follow-Up in months (average)	Clinical Results Ulcer Recurrence (%)	Hemodynamic Competent Valve (%)	Results ■ AVP, ▲ RT
KISTNER	32	/	60-252 (127)	(50)	24/31 (77)*	■ ↗ 81 % (m) ▲ ↗ 56 % (m)
RAJU	68 (71)	/	12-144	16/68 (26)	30/71	/
SOTTIURAI	118	/	8-146 (71)	9/42 (21)	89/118 (75)	/
ERIKSSON	27	27/27	(49)		19/27 (70)	■ ↗ 81 % (m) ▲ ↗ 50 % (m)
PERRIN	85 (94)	65/85	12-96 (58)	10/35(28.6)†	51/83 (62) 64/83 (77)*	■ Normalized 63.2 %

ABBREVIATIONS

I = Internal Valvuloplasty
E = External Valvuloplasty
W =Wrapping
↗=Improved
(m) =Mean

AVP = Ambulatory Venous Pressure
RT = Refilling Time with Tourniquet
* No or mild reflux
† Ulcer recurrence or non-healed ulcer

CASE OF PRIMARY DEEP VENOUS REFLUX

Bo Eklof, MD, PhD
Straub Clinic and Hospital
Honolulu, Hawaii, USA

A 36-year old gentleman from Western Samoa has had recurrent venous ulcerations of both legs that first began when he was 15 years old. He has had at least 15 recurrent ulcers mainly on the anterior and lateral aspect of the right lower leg. He has not been able to work for the past 4 years because of painful, large ulcerations of the right leg. His weight is 340 pounds. He has normal pulses in his foot arteries.

Level 1: There is moderate swelling of both legs with extensive lipodermatosclerosis of both lower legs. Large varicose veins are visible. Large ulcer on the outside of the right leg above the lateral malleolus, smaller ulcer anteriorly (Fig. 1). Hand-held Doppler examination showed significant reflux of the GSV and popliteal vein.

Level 2: Duplex scanning of the right leg showed significant axial reflux of the superficial femoral and popliteal vein, as well as the GSV. There were at least 2 medial and 2 lateral incompetent perforators. APG could not be performed because of the size of his calves.

Level 3: Ascending venography did not show any signs of postthrombotic changes. Descending venography showed cascading axial reflux through the common and superficial femoral and popliteal vein into the calf veins - Kistner 4 (Fig. 2). The deep femoral vein was competent (Fig. 3). The reflux of the GSV was confirmed. No incompetent perforators were seen. Lymphoscintigraphy showed irregular channels in the calf with localized dermal backflow with otherwise good lymphatic flow from the foot to the pelvis.

CEAP classification: C2,3,4,5,6,s; Ep; As,p,d; Pr2,3,11,13,14,15,18

Treatment?

(See figures on next page)

DISCUSSION

DR. O'DONNELL: I think we have two votes for a staged approach-treating the superficial system first and then reserving deep venous reconstruction for recurrence of ulceration. I'd be curious since we have many experts on the stage, Raj, what would you do in this case? Would you wait for the ulcer to heal on conservative therapy and then do the surgery or would you do the surgery right away?

DR. RAJU: The presence of active ulcer has not affected the outcome in any significant fashion. So I think it's a waste of time to wait for the ulcer to heal. Whether you do it in stages or do a complete hemodynamic correction I think depends on the patient. If it's a patient whom you think would tolerate staged procedures, i.e., do a little bit and wait for it to recur after six or seven years and do something else, that's okay. Generally speaking, very young patients and very old patients, those two extremes, you need to do the radical procedure because -- they may not come back if you do something less than total correction and the disease recurs. So I think it's a matter of clinical judgment.

DR. DEPALMA: I'd be happy if the patient didn't come back. I think this is a terribly high-risk patient, and I have dealt with some of these Samoans actually out in the West Coast. I would bet he's diabetic. I don't know if that test has been done. He's not. Okay. The weight, the driving weight of the abdomen, is the factor causing the venous insufficiency, not some magical thing with the valves. I would almost be tempted to send him to a member of my department for gastric partition first. I would probably recommend that because his life expectancy is shortened with this obesity. I would treat the ulcer locally probably with Circaid devices because stockings would never fit. I would also consider doing a lateral SEPS. I have done lateral SEPS in a very obese patient, and you can come down just posteriorly and get into a compartment and find perforators. I've got some pictures of such a procedure. I would do some local thing there or just put them in the stockings. The other thing I would do is to try to heal the ulcer. Medical therapy wasn't mentioned, doxycycline or tetracycline twice a day. A metalloprotease inhibiter tends to inhibit this kind of inflammation and skin change. I would prescribe these chronically. I would stay away from the deep system in this man. I personally would be afraid of getting a pulmonary embolus.

DR. DALSING: I think this patient's weight is a major problem and I think it would be very difficult to gain access to the deep system. I also would have liked to have seen the first portion of the descending venogram to know if I really had valves to work on. I may have missed it on the second part of the venogram, I couldn't tell if there was one there or not. I think if I had to do something and if we took care of some of his weight, I'd do the superficial stripping first with the perforators and then see what happened before approaching the deep system.

DR. GLOVICZKI: I agree with Bob that these types of patients, who come from a long distance, they come and they would like to have a complete operation. They have one chance. You want to fix all problems. Not very long ago I had a patient from Turkey where I did the same thing. I did SEPS, stripping and deep venous valve reconstruction. I am hesitant to do it all at one stage same day, and the reason I am is because I anticoagulate my deep venous reconstruction patients, but I would be hesitant to do that to patients who have stripping and SEPS and avulsion of varicose veins. So I would do the SEPS and the superficial ablation, and then probably a few days later I would do the deep vein reconstruction and full anticoagulation and then send the patient back to Samoa or Bora Bora.

DR. O'DONNELL: It's not bleeding with SEPS that you fear, but rather bleeding with avulsion of the greater saphenous. Many of us combine perforator interruption with deep venous reconstruction and use peri-operative anti-coagulation.

DR. GOREN: I applaud the panel's conclusion that a staged approach is best in these types of cases. I also fully agree with Dr. O'Donnell's statement regarding the existence of overload incompetence of the deep venous system caused by a hemodynamically significant superficial reflux existing in certain cases of varicose veins. I will illustrate this with three slides from a case study

Figure 1.– Large clover-shaped ulcer of the right leg which is swollen with extensive lipodermatosclerosis.



Figure 2.– Descending venogram of the right leg through catheterization of the left femoral vein showed cascading axial reflux (Kistner grade 4) through the common and superficial femoral, into the popliteal and tibial veins.



Figure 3.– Descending venogram showed that the deep femoral vein was competent.



Figure 4.– Healing of the ulcerations after high ligation and stripping of the long saphenous vein, multiple perforator ligations and transposition of the incompetent superficial femoral vein into the competent deep femoral vein.



encountered in my practice. A middle-aged gentleman, college professor, consulted me for huge and neglected left long saphenous varicosities with obvious signs of chronic venous insufficiency (C5-6). On Doppler ultrasound examination he was found to have both superficial and deep (popliteal and superficial femoral) vein incompetence. An APG examination revealed a VFI of 9.1 ml/sec. The test was immediately repeated with finger occlusion of the long saphenous vein against the tibial condyle. The VFI dropped to only 5.3 ml/sec validating the existence of a significant deep reflux. Both his EF as well as RVF worsened, probably due to retrograde ejection through incompetent perforators. Two years after complete surgery for his long saphenous varicosities (with no perforator surgery) his VFI returned to normal at 1.48 ml/sec and his EF and RVF were normalized as well. In the case presented here before us, there are additional aggravating factors to reckon with. One is the excess weight and the other is a possible diminished calf pump function due to a limitation of movement in the ankle joint. Prof. Hach of Germany has described this condition namely the ankle joint failure as the "artherogenic congestion syndrome". I would like also to emphasize that some of these CVI patients have secondary gains from the condition. The whole family is catering to the patient who is the center of attention. Possibly too, these people are getting financial assistance for their disability so that the incentive to get well is simply not there. In my practice if I encounter a non-cooperating patient, he/she will be released and advised to seek help from someone else.

DR. KRYLOV: I have a question to our distinguished moderator. When you're doing these endoscopic repairs do you use anticoagulation?

DR. O'DONNELL: Do I use anticoagulation? Yes. Postoperatively these patients receive anticoagulation because I had two internal valvuloplasties that thrombosed while not receiving anticoagulation. I know some of the other panelists don't anticoagulate. They were the only deep venous reconstructive procedure in my experience that's thrombosed. Now all of my deep venous reconstructions get therapeutic heparin.

DR. KRYLOV: And the patient is ambulated anyway?

DR. O'DONNELL: Yes. The patient after a procedure like this is ambulatory with a little difficulty because they have a groin incision.

DR. KRYLOV: You are not keeping him in bed?

DR. O'DONNELL: No, I'm not keeping him in bed. Why should I keep him in bed?

DR. KRYLOV: And a question to Dr. Kistner. In this case if you will find the valve below the profunda you could repair that, but if you will open the vein and you will not find the valve, what do you do in that case? The phlebogram is not 100 percent distinctive. You just see something which could be the valve. It is especially bad that we are more and more relying on the duplex data, and the duplex is even less accurate than a phlebogram. What would you do in a case if you will not find the valve but the vein is already open?

DR. KISTNER: I think that brings up a good point. If you're going to do venous reconstruction, you need to know a fallback procedure, and in this man I think there is an excellent fallback procedure because he has a competent profunda system and could well be treated by a transposition.

DR. O'DONNELL: But what would happen if you didn't have that valve function and you got in there? What would you do next? I think that's Dr. Krylov's point.

DR. KISTNER: The profunda valve does function.

DR. O'DONNELL: But he's saying in a hypothetical case it doesn't. You get in there. It doesn't. Then what would you do?

DR. KISTNER: Then your fallback position is probably an axillary transplant.

DR. KRYLOV: With false positive data on the phlebogram, due to twisting of the vein, the picture will indicate that the valve is competent, but actually the valve is not present.

DR. KISTNER: Are you speaking of the superficial femoral valve or the profunda valve?

DR. KRYLOV: No, superficial femoral.

DR. KISTNER: Yes, I agree with you. Sometimes you get there and it's not what you thought. The first thing we would do as we approach the vein is an adventitial dissection to look for the white line of insertion of the valve cusp. If that line is not complete, then we know that we're not going to get a competent valve if we try to repair it. Then I would go probably to the transposition procedure.

DR. KRYLOV: In my situation I prefer to open the vein in the sinus, and in this case I can simply close the vein and make something else including this transposition.

DR. BELCARO: I think that one of the important requisites of valvuloplasty is that it be done only in subjects without severe conditions or complications like obesity or diabetes. I think it should ideally be done only in normal subjects.

DR. O'DONNELL: If they were normal subjects, we wouldn't be doing them.

DR. BELCARO: By "normal" I mean normal weight, body mass index, not diabetics, and so on. I mean only patients with pure primary incompetence. Also, I want to say to Professor Perrin that the follow up of valvuloplasty (which we call limited external valvuloplasty) now include more than ten years including more than 60 patients. We think it's a very useful procedure if you limit valvuloplasty mainly to patients with primary incompetence. About secondary incompetence due to post-thrombotic syndrome, most of these patients (maybe 35 percent) may have a thrombophilia or some situation which can predispose them to new episodes of thrombosis. I don't think that (unless we have special cases) in post-thrombotic syndrome we should actually use valvuloplasty. In primary incompetence we can perform valvuloplasty and it's very effective. In secondary incompetence due to post-thrombotic syndrome we really need some guidelines because only a very limited amount of patients can benefit from this procedure.

DR. KISTNER: I guess my question is whether there is a primary incompetent valve in association with post-thrombotic disease. If so, I treat them as a primary valve problem with valvuloplasty and expect to get good results. If it is a scarred valve, I have not been successful with freeing up the scarring and having it become functional. I think maybe Raj has a better experience and would like to hear what he has to say about it.

DR. RAJU: I think some post-thrombotic valves can be repaired, but you should feel good about it. If the quality of repair is good, then it's reasonable to expect a good result. I do not think general surgeons should be doing valve reconstruction, not because they are general surgeons. I think anybody who does this has to focus on venous disease to a large extent. I think otherwise the patient gets the short shift.

DR. O'DONNELL: I think we've all seen three or four patients who have had vascular surgeons who do occasional venous surgery have this short shift, as you say.

DR. NEGLEN: I have a question for you, Bob. Have you ever had to do an axillary vein transplant in a primary sufficiency patient, and if you had, how often do you find that the axillary valve appears insufficient too?

DR. KISTNER: Peter, I don't have enough experience to tell you. If I've done them, it's been just once or twice that I've had to take an axillary vein to put down there. So I don't know, but I think you have better data on that. Why don't we reverse the question?

DR. TRIPATHI: This is a question for Bob. Nobody is talking about venous ligation, and in patients who have got valvular dysplasia or aplasia, what is the role of venous ligation if the profunda axis is quite good and competent?

DR. KISTNER: If you have aplasia without any other competent axial segment, ligation doesn't play a role. I think you're just stuck in that situation. The only possibility that I know of is a cryopreserved homograft valve.

DR. TRIPATHI: What are the options when the profunda is okay or competent and what are the options when the profunda is not competent?

DR. KISTNER: If the profunda is competent, you always have the alternative of a transposition which is my second choice. If the profunda is not competent, then I don't think reconstructive surgery, would play a role, unless you have a very severe advanced case, and certainly not in this kind of a patient.

DR. TRIPATHI: And how does ligation compare in a case where profunda is competent with transposition?

DR. KISTNER: If the profunda is competent, a compromised (partially thrombosed) superficial femoral vein can be ligated with good results. If there is still good outflow through the SFV, we prefer transposition to ligation.

DR. DEPALMA: There's one way of looking at that, and that is on the operating table to occlude the superficial femoral vein and measure the pressure in the foot and in the arm the way that Raju does, then change the position. And see if you tilt the table down or if you clamp the vein in the supine position and the pressure in the foot goes up, do not ligate the superficial vein.

DR. DALSING: Just one comment. If the question was, can you ligate a superficial femoral vein with a competent profunda? It would probably be okay. Bob has actually looked at that question and found no long-term disability. If you have a clot within the SFV and you ligate it, even if it doesn't involve the entire vein and the profunda is normal, you should be all right. However, if the profunda is incompetent, then you have a problem long-term.

DR. GARCIA-RINALDI: I'd like to ask Dr. Kistner that if we feel that the concept of overflow is the cause of venous dilatation and incompetence, how many of the transposition cases into the deep femoral have indeed developed insufficiency of the valve.

DR. KISTNER: The concept that overflow in the venous system causes venous dilation of the unobstructed deep system makes little sense to me. I really don't understand it. If you really have valvular pathology, I don't believe cutting off saphenous inflow is going to cause that valve to work again unless there is proximal obstruction. I don't understand that physiologic concept very well, so someone else will have to speak to that.

DR. O'DONNELL: Well, we didn't understand it well because it's similar to the state of carotid disease before the availability of duplex scans to detail the extent of carotid occlusive disease. Similarly there was valvular incompetence in many of these patients whom we thought had primary varicosities. Certainly in my practice it's not unusual to encounter a number of patients with incompetence of the superficial femoral valve with reflux by duplex scan. Following a standard ligation and stripping the reflux disappears post-operatively.

DR. KISTNER: Is that a total axial reflux, Tom, or segmental?

DR. O'DONNELL: It's segmental, maybe includes the mid-thigh valve, but the popliteal is usually competent.

SURGICAL MANAGEMENT

DR. EKLOF: This patient comes from Western Samoa. We found out that he had eight male relatives, all uncles that had the same problem as this young man had. Since their early teens they developed recurrent venous ulcers of both legs. Our patient came to Hawaii about eight years ago. He is a very healthy, big, strong Samoan. Typical football player with a perfect calf muscle pump function. He has no ankle problems. He has never had DVT. He had been treated for a long time with Unna boots without any effect on healing. So when he was referred to us we did all the investigations that I showed to you, and we tried to continue conservative treatment to at least try to heal his ulcers before surgery. We were not successful. So after marking his perforators with a scanner the day before surgery, we did high ligation and stripping of the GSV. We also did perforator ligation with small incisions on the medial and the lateral side, where we found big perforators four to five millimeters wide. We explored the common femoral, and the deep and superficial femoral veins in search of the valve that was quite beautifully shown on the venogram. We did a very careful excision of the adventitia, and could only see one cusp. Since we couldn't identify the opposing cusp, we couldn't do an external valvuloplasty. We decided to divide the superficial femoral vein, and we looked into its proximal part and found that he had only one valve cusp. We did a transposition of the superficial femoral vein into the competent deep femoral vein. This was in July. His pain disappeared immediately after his reflux was repaired. We have done several scans and it is completely competent. We skin grafted his ulcers and they are completely healed (Fig. 4). He has decreased his weight by about 20 pounds and he plans to go back to work.

(Scientific Articles continue on next page)

IV. POST-THROMBOTIC DISEASE: DEEP AND SUPERFICIAL

CASE OF SECONDARY DEEP VENOUS DISEASE-SOMETHING CAN ALWAYS BE DONE

Seshadri Raju, MD
University of Mississippi Medical Center
Jackson, Mississippi, USA

Compression therapy of deep venous insufficiency is associated with high recurrence.[1] In a carefully conducted study from Sweden, Nelzen, et al reported a 56% recurrence, the majority occurring in the first year. Apart from the high recurrence and primary non-healing (30%), noncompliance is a major factor in many compression regimens.[2,3] Noncompliance is associated with nearly 100% recurrence.[2] The reasons for noncompliance are many, including lack of self discipline, poor fit, a sensation of "binding" or "cutting off the circulation", cosmetic considerations, warm weather, high recurrent cost, and other more compelling reasons such as contact dermatitis, infirmity or arthritis that prevents the patient from applying the device without daily help. In addition to these drawbacks it is our impression that many patients under chronic compression regimens seldom get *complete* relief of symptoms particularly pain and swelling. A surgical approach provides a more definitive therapy with superior symptom relief. The majority of patients after successful valve repair discard their stockings,[4] and the remainder who continue to use them after surgery have a greater latitude and freedom in utilizing the device compared to patients on primary compression therapy. The surgical option should, therefore, be considered in patients in whom compression therapy had failed or cannot be applied.

Relatively minor improvement in hemodynamics can lead to remission with healing of stasis ulceration, even though substantial improvement in reflux parameters (see below re. obstruction) appears to be required for total relief of pain and swelling. This argues for an aggressive surgical approach in patients with secondary or post-thrombotic disease. This is the basis of the premise that a comprehensive correction of obstructive and refluxive pathologies as is practically feasible offers the best chance of symptom relief for the post-thrombotic patient. Hard data to support this philosophy is however not yet available and the approach is strictly empirical at the present time. However there have been technical advances in venous surgery, allowing a greater number of patients, many with pathologies previously considered inoperable to benefit from a surgical approach. Several different techniques[5] of valve repair are now available, allowing repair of even small caliber veins or multiple repairs if desired. There is little difference in the clinical result between the various techniques.

Similar ulcer healing is obtained as long as valve competency was restored irregardless of the individual technique used. Valve reconstruction techniques can now be applied to even post-thrombotic trabeculated veins[6] and axially transformed profunda femoris veins.[7] Cryovalves have become available for salvage cases. Secondary saphenous varicosities can be safely stripped[8] providing improvement in the overall reflux without affecting outflow. The advent of endovenous stenting has provided a means of a simple percutaneous technique in nearly an outpatient setting to afford significant symptom relief in the large subset of patients with stenosis or obstruction of the iliac veins. Relief of pain and swelling with this simple procedure has been impressive.[9] Approximately 30% of ulcers appear to heal with the stenting procedure alone.

In the last five years, >85% operability was achieved in post-thrombotic patients, even though no preselection was made based on severity of venographic appearance, size, extent or duration of the ulcer, or presence of procoagulant abnormalities. Employing this aggressive approach, actuarial ulcer healing of >60% at 10 yrs was achieved even in those with severely mangled and trabeculated post-thrombotic veins.[5]

References

1. Nelzen O, Bergqvist D, Lindhagen A. Long term prognosis for patients with chronic leg ulcers: a prospective cohort study, *Eur J Vasc Endovasc Surg.* 1997;13:500-08.
2. Mayberry JC Moneta GL, Taylor LM Jr., Porter JM. Fifteen year results of ambulatory compression therapy for chronic venous ulcers, *Surgery.* 1991;109:575-81.
3. Franks PJ, Oldroyd MI, Dickson D, Sharp EJ, Moffatt CJ. Risk factors for leg recurrence: randomized trial; of two types of compression stocking. *Age and Aging.* I995; 24:490-4.
4. Raju S, Fredericks R. Valve reconstruction procedures for non-obstructive venous insufficiency, *J Vasc Surg.* I988;7:301-10.
5. Raju S, Hardy JD. Technical options in venous valve reconstruction, *Am J Surg.* I997;173:301-07.
6. Raju S, Neglen PN. Doolittle J, Meydrech EF. Axillary vein transfer in trabeculated post-thrombotic veins, *J Vasc Surg.* 1999;29:1050-64.
7. Raju S, Fountain T, Neglen PN, Devidas M. Axial transformation of the profunda femoris vein, *J Vasc Surg.* I998;27:651-9.
8. Raju S, Easterwood L, Fountain T, Fredericks R, Neglen PN. Saphenectomy in the presence of chronic venous obstruction, *Surgery.* I998;123:637-44.
9. Neglen PN, Raju S. Endovenous stents for iliac venous obstruction, *J Endovasc Surg.* In press.

CASE OF SECONDARY DEEP VENOUS DISEASE – VALVE TRANSPLANTATION

Michael C. Dalsing, MD
Indiana University Medical School
Indianapolis, Indiana, USA

Introduction

It has been estimated that 2.7% of the U.S. population (~ 6 million people) have advanced chronic venous disease with approximately 800,000 new cases recognized per year.[1,2] These symptomatic patients often have deep venous disease (~ 70% isolated or 80-100% combined with superficial disease).[2] Approximately 85% are due to insufficiency and possibly 50% have an etiology classified as secondary (eg. post-phlebitic).[3,4] A rough estimation would suggest therefore, that of these six million patients about two million would have deep venous insufficiency due to a secondary cause and may require venous valve transplantation to free them from a life of disabling symptoms.

Indications/Preoperative Evaluation

Patient selection for venous valve transplantation is based upon symptoms, anatomy/physiology and the failure of other more conservative medical and surgical options designed to alleviate the patient's disability.

Patient symptoms coincide with a CEAP classification of 4 or higher.[5] The patients typically have severe lower extremity edema, lipodermatosclerosis and recurrent venous ulceration. Recurrent

ulceration unresponsive to medical management afflicting a motivated compliant patient constitutes a prime candidate for this surgical approach.

Anatomy/physiologic considerations are defined by the preoperative work-up. The initial history and physical examination can eliminate patients with insignificant venous disease while arterial disease (lower extremity arterial doppler examination) and a preexisting hypercoagulable state (Antithrombin III, Protein C, Protein S, Factor V leiden deficiencies, etc.) can also be investigated. The latter does not necessarily eliminate the patient as a candidate for venous surgery but does stress the need for stringent anticoagulant therapy if a surgical procedure is undertaken. The next step is a venous duplex study to define the precise location of disease throughout the leg (obstruction or insufficiency). In addition, a plethysmographic evaluation, usually air plethysmography, provides an overall hemodynamic estimate of calf pump function, venous obstruction or valvular insufficiency. Confirming insufficiency as the major problem, an ascending venogram with intravenous pressure measurements confirms the noninvasive findings and provides a roadmap of the venous anatomy. If obstruction is a significant problem, it would be addressed at this time. Lastly, a descending venogram performed by the method of Kistner[6] determines the presence and location of venous valves as well as the degree of reflux. Grade 3 and 4 reflux are considered abnormal.

Prior to considering a valve transplantation to alleviate the patient's complaints, all superficial and perforator disease should be addressed. I tend not to perform simultaneous major superficial and deep venous surgery due to the bleeding which may occur at the time of heparinization for the valve transplantation. Certainly, the less invasive nature and long-term results of valvuloplasty[7] make it a surgical approach which should be attempted prior to transplantation if applicable. The post-phlebitic patients considered for valve transplantation generally do not have the proper anatomy to allow this option. Valve transposition is also a viable first approach but is possible in less than 3% of patients evaluated.[8] Valve transplantation, due to its need for multiple incisions and more extensive operative repair, is the final option offered to patients who have exhausted all other avenues. For those 30-40% of patients who have no appropriate autogenous valve for transplantation,[9] cryopreserved venous valve transplantation is considered.

Technique

The goal of therapy is, of course, to prevent grade 3 or 4 venous reflux. When considering venous reflux, it is critical to evaluate the profunda femoral vein. Profunda reflux can allow grade 3 plus reflux and recurrent symptoms following the correction of superficial femoral vein incompe-tence.[7,9,10] Often, only one autogenous venous valve is available for transplantation. In this situation, the valve must be positioned below all thigh reflux. The superficial femoral vein will suffice if the profunda is competent,[7,9-11] but others have championed the popliteal location for most cases.[12-15] The popliteal location must be chosen if the profunda is incompetent. If two or more valves are available, correction of reflux in both the superficial femoral and profunda femoral veins may be appropriate.[16] The duplex scan and ascending venogram may help one decide which area of the vein is most normal in caliber allowing optimal flow and ease of surgical implantation.

The operation is routinely performed under general anesthesia to allow dissection in the leg and axillary region. A valve containing vein segment demonstrated to be competent by preoperative duplex scanning is harvested through an infra-clavicular incision positioned over the neurovascular bundle. Sometimes the only available vein is in the upper arm venous system but the size discrepancy makes this less desirable. Harvest is not performed until the standard groin or medial leg incision has allowed dissection of the appropriate superficial femoral or popliteal vein segment. In addition, systemic heparinization is provided prior to any venous interruption. At harvest, the axillary vein is simply ligated and divided to provide a 4-6 cm length of vein with the valve lying safely within. The lower leg venous segment is transected after applying vessel loop or vascular clamp control. The vein edges spring apart and residual vein is then removed to accommodate the length of upper extremity vein available. The anastomosis is performed with interrupted 6-0 or 7-0 prolene sutures in an end-to-end fashion. It is often useful to perform the cephalad anastomosis first, release the proximal clamp, and allow retrograde flow. The valve, if competent, will prevent reflux of the blood and the caudal anastomosis can be completed with proximal clamps removed. This confirms valve competence and allows more native femoral or popliteal vein to be removed if required for proper matching of length. The distal anastomosis is flushed, irrigated with heparinized saline, the last sutures tied and the distal clamp is removed. The "strip-test" confirms valvular competence. If incompetent, the valve is made competent by the closed technique of Kistner.[17] Careful hemostasis is mandatory. Suction drainage of the subcutaneous tissue is optional but often used because postoperative anticoagulation will be utilized. Incisions are closed in standard fashion. Intermittent lower limb pneumatic compression is begun in the operating room and continued until the patient is ambulating well. Postoperative anticoagulation may be with fractionated or unfractionated heparin followed by Coumadin therapy for 3-6 months or for life if the patient has a hypercoagulable state. Elastic compressive support is encouraged to control any residual edema.

For those patients with no autogenous venous valve available for transplantation, the use of cryopreserved tissue has been studied. The technique is essentially the same as for an autogenous transplant without the need for an axillary incision. The cryopreserved valve containing vein segment is ordered by blood type, diameter and length. It was originally procured from qualified donors with an acceptable superficial femoral vein valve. The allograft is shipped at –70°C and must be thawed for surgical use within 72 hours. The thawing process is a 4 step protocol generally requiring 30 minutes and, therefore, should be started significantly early during the groin or medial leg incision. Once thawed, the valve is checked for competence by injecting heparinized saline retrograde in the vein. Valvuloplasty may be used if required, but the company is willing to send more than one valve to ensure an immediately competent valve. I personally tend to add a distal arteriovenous fistula if the valve is placed low in the popliteal fossa. Anticoagulation is continued for the life of the valve. All other technical considerations are similar to those used for an autogenous valve transplant.

Results

The competence of upper extremity donor valves, when defined as

absent or only mild reflux and substantiated by duplex scanning or descending venography, range from 75-100% at six months.[7,10,13,14] With follow-up of 6-48 months, the reported competency rate was 34-100%.[7,10-14] Although not always in a direct one to one relationship, a competent valve translates into a symptomatically improved limb. Restricting the patients to those with prior or concurrent recalcitrant ulcers, ulcer healing occurred in 95% and recurrence was prevented in 60% up to 10 years post-transplant.[11]

Cryopreserved tissue has only recently been used for this clinical scenario, the single published paper suggests a 6 month valve competency rate of approximately 60% with ulcer healing/prevention of recurrence of approximately 67%.[18] Issues of rejection and the need for long-term anticoagulation make this a secondary choice for most patients.

Summary

The number of patients suffering from disabling chronic venous insufficiency is not insignificant and is generally treated with conservative medical maneuvers. There are alternatives including surgical procedures to prevent massive venous reflux. Proper patient classification and a regimented diagnostic evaluation including non-invasive and invasive imaging can define the patient who may benefit from a specific surgical approach. The transplantation of valves from the upper to lower extremity is generally reserved for patients with secondary causes of deep venous insufficiency who have no other options. The environment into which the valve is placed is a damaged, scarred conduit which probably explains the less impressive long-term function of these valves when compared to primary valvuloplasty. Nevertheless, one can expect a clinical benefit defined as ulcer prevention in approximately 60% of patients. For those lacking an autogenous valve, a cryopreserved valve may substitute with encouraging early results.

References

1. Coon WW, Willis PW, Keller JB. Venous thromboembolism and other venous disease in the Tecumseh community health study, *Circulation.* 1973;XLVIII:839-846.
2. O'Donnell TF. Chronic venous insufficiency: An overview of epidemiology, classification, and anatomic considerations, *Sem in Vasc Surg.* 1988;1:60-65.
3. Kistner, RL. Primary venous valve incompetence of the leg, *Am J Surg.* 1980;140:218-224.
4. Kistner RL. Surgical repair of the incompetent femoral vein valve, *Arch Surg.* 1975;110:1336-1342.
5. Prepared by an ad hoc committee of the American Venous Forum chaired by A.N. Nicolaides. Classification and grading of chronic venous disease in the lower limbs. A consensus statement. In: Gloviczki P, Yao JST, eds. *Handbook of Venous Disorders.* New York, NY: Chapman & Hall Medical; 1996:652-660.
6. Kistner RL, Ferris EB, Randhawa MD. A method of performing descending venography, *J Vasc Surg.* 1986;4:464-468.
7. Masuda EM, Kistner RL. Long-term results of venous valve reconstruction: A four- to twenty-one year follow-up, *J Vasc Surg.* 1994;19: 391-403.
8. Raju S. Venous insufficiency of the lower limb and stasis ulceration. Changing concepts and management, *Ann Surg.* 1983;197: 688-697.
9. Raju S, Fredericks R. Valve reconstruction procedures for nonobstructive venous insufficiency: Rationale, techniques, and results in 107 procedures with two- to eight-year follow-up, *J Vasc Surg.* 1988; 7:301-310.
10. Eriksson I, Almgren B. Influence of the profunda femoris vein on venous hemodynamics of the limb, *J Vasc Surg.* 1986;4:390-395.
11. Raju S. Fredericks RK, Neglen PN, et al. Durability of venous valve reconstruction techniques for 'primary' and post-thrombotic reflux, *J Vasc Surg.* 1996;23:357-367.
12. Taheri SA, Heffner R, Budd T. Five years' experience with vein valve transplant, *World J Surg.* 1986;10: 935-937.
13. O'Donnell TF, Mackey WC, Shepard AD. Clinical, hemodynamic, and anatomic follow-up of direct venous reconstruction, *Arch Surg.* 1987;122:474-482.
14. Rai DB, Lerner R. Chronic venous insufficiency disease. Its etiology. A new technique for vein valve transplantation, *Int Surg.* 1991;76: 174-178.
15. Nash T. Long term results of vein valve transplants placed in the popliteal vein for intractable postphlebitic venous ulcers and pre-ulcer skin changes, *J Cardiovasc Surg.* 1988;29:712-716.
16. Raju, S. Multiple-valve reconstruction for venous insufficiency: Indications, optimal technique, and results. In: Veith, FJ, ed. *Current Critical Problems in Vascular Surgery, Volume 4.* St. Louis, MO: 1992:122-125.
17. Kistner RL. Valve repair and segment transposition in primary valvular insufficiency. In: Bergan JJ, Yao JST, eds. *Venous Disorders.* Philadelphia, PA: 1991:261.
18. Dalsing MC, Raju S, Wakefield TW, Taheri S. A multi-center, phase I evaluation of cryopreserved venous valve allografts for the treatment of chronic deep venous insufficiency, *J Vasc Surg.* In press.

ANGIOPLASTY AND STENTING OF THE OBSTRUCTED ILIAC VEIN

Peter Neglen, MD, PhD
River Oaks Hospital
Jackson, Mississippi, USA
S. Raju, MD

Chronic venous insufficiency of the lower extremity is a complex disease with several etiological factors. In approximately one-third of the limbs with postthombotic disease an obstructive component is predominant. The treatment of the outflow obstruction has been hampered by difficulty in identifying hemodynamically significant obstruction and by a rather extensive surgery to correct it. Available surgical procedures like the crossover femoro-femoral bypass or axial iliocaval bypass graft constitute major surgery, always followed by long-term anticoagulation. The interest in venous obstruction is now rising owing to the development of the new technology to diagnose and treat stenosis and occlusion by percutaneous dilatation and insertion of stent. This study presents the technical aspects of this procedure and the results when applied in limbs with postthombotic disease.

Material

A prospective study of 78 limbs with post-thrombotic disease had balloon dilatation and insertion of stent to correct iliac vein obstruction (median age 47 [range 18-77], male/female ratio 1/1, left/right lower extremity 2.3/1). All patients had a thorough history taken and clinical examination performed. A visual analogue pain severity scale from 1-10, in which 10 is the most severe pain, was used to assess pain intensity. The clinical score as per the guidelines of the SVS/ISCVS was also used to assess swelling and pain.

The presenting limb complaint was active (24%, 24/79) or healed ulcer (8%, 6/79); lipodermatosclerosis, pigmentation and/or dermatitis (12%, 9/78); and swelling (50%, 39/78). Concomitantly, 35% of the patients had severe pain (> 5/10 as assessed by the analogue pain severity scale) and required analgesics. Only 16% of patients denied any pain. In addition, 97% of the patients complained of swelling. A comprehensive work up was performed prior to the intervention.

The following preoperative indicators of obstruction were used: occlusion or obvious stenosis on ascending or antegrade transfemoral venography, increased arm/foot pressure differential and/or abnormal hyperemia-induced pressure rise, and presence of pelvic collaterals on venogram. Positive preoperative pressure measurement was present in 38% of the limbs, radiological obstruction in 81%, and collaterals were visualized in 63%.

Intervention

All interventions were performed in a dedicated interventional room with ceiling mounted ISS equipment in the surgical suite with complete sterile precautions. The procedures were done under general anesthesia or local infiltration analgesia in combination with

monitored sedation. Initially, cannulation of the femoral vein was blind, but later it was performed with guidance of ultrasound. After cannulation and insertion of a pinnacle, an antegrade venogram was performed followed by intra-vascular ultrasound (IVUS). Degree, length, and site of obstruction were recorded, and the presence and type of collaterals were noted. Transverse vessel area and diameters were measured by IVUS. Intraoperatively pull-through pressure from the inferior vena cava to the femoral vein was then obtained. Femoral pressure distal to the presumed obstruction was obtained before and after injection of 30 mg papaverine intra-arterially to increase the venous flow. The obstruction was dilated with a balloon and the degree of waisting was noted. The venogram and IVUS investigation were repeated to measure any recoil. The dilated segment was then traversed with a stent of appropriate length and diameter (Wallstent). The venogram, IVUS investigation and pressure measurements were repeated to assess the final result. The sheath was removed and pressure applied for 10 minutes. The patients received 3-5,000 units heparin and 30 mg ketorolac intravenously during the procedure. All patients were admitted for less than 23 hours. Postoperatively, a foot compression device was used, dalteparin 5,000 units s.q. administered once daily; and a ketorolac injection repeated in the morning before discharge. Aspirin (81 mg p.o.) daily was started immediately postoperatively and continued. Only patients already on warfarin preoperatively owing to prior deep vein thrombosis and thrombophilia were anticoagulated postoperatively. Warfarin was not routinely discontinued prior to surgery.

The patients were followed clinically after 6 weeks and with repeat ascending/antegrade transfemoral venography and functional studies later.

Result

The deep system alone was involved in 42% of lower limbs. The minority (32%) had only obstruction and the remaining lower extremities had a combination of reflux and obstruction. The results of the hemodynamic studies performed before surgery were obviously affected by the high rate of concomitant reflux observed in these post-thrombotic limbs.

Intra-operative: Only one stent was used in the majority of cases, but as many as 6 stents were used in one patient. The median length of stented area was 8 cm (range: 4-26) and the median diameter of the inserted stent was 16 mm (range: 10-20 mm). The combined involvement of common iliac vein and external iliac vein (42%) was almost as common as of the common iliac vein alone (45%). The venogram underestimated the degree of narrowing by 10% compared to the findings of the IVUS investigation. Obvious waisting of the balloon on inflation, indicating the presence of resistance at the narrowed portion of the vein, was found in 87% of limbs. Minimal change was observed in 1% and no waisting occurred in 12%.

Venous collateralization was found on the intraoperative venogram in 78% of patients. Transpelvic collaterals were most commonly seen (89%), followed in frequency by a visualized ascending lumbar vein (32%), and axial collaterals (18%). After balloon-dilatation and/or stenting, the collaterals disappeared completely in 72%, substantially decreased in 17% and remained essentially unchanged in 11% of limbs. A subgroup of 17 limbs with diffuse narrowing of the iliac vein with no collateral formation was identified. After balloon dilatation the vessel in most instances recoiled towards the original dimension to varying degrees. The mean recoil percentage was 86% (± 26, SD). No iliac vein pressure gradient was observed in many of the limbs during the intraoperative measurement. A resting gradient of ≥ 2 mmHg was seen in only 18% of limbs. This rate increased to 54% after papaverine injection. The cross area increased from 0.44 ± 0.33 to 1.51 ± 0.41 cm^2 poststenting.

Post-operative: The early complication rate was low and there was no mortality. Thrombosis of the stented area occurred in 7 limbs within 3 weeks of the surgery. Thus, the postoperative occlusion rate was 8%.

During the initial part of this study (16 limbs) care was taken not to insert any stent into the inferior vena cava, but rather to place it slightly beyond the stenosis even when the narrowing was at the ilio-caval junction. Five of these patients (38%) had full relief of symptoms after treatment, but returned during the follow-up period with symptomatic recurrence 6-8 months later and restenosis central to the stent. All limbs were restented successfully with placement of the stent well into the inferior vena cava. When this late complication of stenting was realized, all subsequent stents have been placed well into the inferior vena cava. Neither deep vein thrombosis of the contralateral limb nor any recurrence of stenosis of the common iliac vein has occurred.

Clinical: The median clinical follow-up of 62/78 limbs (79%) is 9 months (range: 1-27). Antegrade transfemoral or ascending venograms was performed in 54 patients. Three stents had irregularities within the stent, indicating hyperplasia or partial rethrombosis but no obstruction to flow. During follow-up one limb was found with recurrent stenosis distal to the stent, and late occlusion occurred in 2 limbs (4%). The remaining patients (8) had duplex Doppler ultrasound performed, which showed no indication of obstruction of the iliac segment. The primary, primary assisted, and secondary patency rates at 1-year were 75%, 87%, and 89%, respectively, as per reporting standards of the SVS/ISCVS.

There was substantial pain relief after surgery. The rate of patients free from pain increased from 16% to 64% postoperatively. The mean value of the pain intensity scale decreased from 4.3 ± 2.5 (SD) before the intervention to 1.5 ± 2.4 (SD) ($p < 0.001$) on follow-up. The leg edema also improved. Prior to surgery 97% of patients complained of varying degree of swelling; this rate was reduced to 57% after the procedure. The clinical score of swelling decreased from 1.4 ± 0.5 (SD) to 0.8 ± 0.8 (SD) ($p < 0.001$).

Twenty-four limbs had active ulcer before the balloon dilatation and stenting. In eleven patients, the ulcer healed after the stenting before additional reflux surgery was performed (46%). The ulcer healed in two additional patients, but recurred quickly; four venous ulcers never healed, and seven limbs were not yet evaluated.

Conclusions

1. Venoplasty and stenting of the iliac vein is a safe procedure with no mortality, low morbidity, and substantial clinical benefits.
2. Iliac vein obstruction is a painful lesion, significantly improved by balloon dilatation and stenting.

3. The significant recoil after simple dilatation warrants a stent insertion in all cases following venoplasty.
4. Stents should be inserted well into the IVC to prevent recurrence of central stenosis.
5. The definite objective preoperative test to use for selection for this procedure needs to be defined.

CASE OF SECONDARY DEEP VENOUS DISEASE

Robert L. Kistner, MD
Straub Clinic and Hospital
Honolulu, Hawaii, USA

This 47-year old healthy male was referred with a 4-year history of chronic venous ulceration of the right lower extremity due to post-thrombotic disease of the femoral-popliteal-tibial veins.

The problem began 4 years ago with the spontaneous onset of itching, discoloration, and a small sore on the posterior aspect of the calf. Swelling and chronic aching with dependency were progressive, and the ulcer grew to a large, encircling lesion of the entire circumference of the calf. Treatment by a series of 8 physicians entailed many medications during this time, but elastic support was not prescribed. No objective tests were done. During this time the problem was progressive.

A clinically apparent DVT of the SFV was diagnosed one year ago and treated with heparin-coumadin. Workup for a hypercoagulable state was negative.

3 months prior to this referral, he consulted a new physician who diagnosed severe deep venous reflux and prescribed elevation of the leg, pneumatic compression and pumping of the leg, and limitation of activity. His ulcer closed over the next three months.

The dominant symptoms were aching and swelling of the leg, and venous claudication with walking. The need to pump his leg interfered with his occupation as a traveling sales person. He had to stop his hunting activities. The problem was that the treatment prescription to control the ulceration required a life-style change that was incompatible with his desired way of life, and with his occupation.

P.E.: Healthy, strong 47-year old male. 5'10" tall, 230 lbs. Normal physical examination including arterial pulses, except for venous findings in RLE: Right calf 1" larger than left; large discoloration encircling the leg, 6" in length on post-lat and 2" on medial sides; no induration of skin, good turgor. V.V. in leg, mild.

Doppler: Mild local reflux in Posterior tibial vein, local and sustained 4-second Valsalva reflux in the popliteal vein. Late onset reflux in GSV, as found with perforator reflux. Normal phasic flow in common femoral vein.

Phase II.
Duplex scan: Occlusion of SFV to adductor canal.
PFV-popliteal connection, with 2 second reflux
SFV-popliteal collateral, with 4 second reflux
Incompetent greater saphenous vein, with low velocity 4-second reflux
Popliteal, crural, and short saphenous reflux, low velocity, 4 second duration
Incompetent, 2.0 mm perforators, medial and lateral lower calf, single
Summary: Post-thrombotic extremity with mixed obstruction and reflux. Occlusion of entire SFV, and low velocity reflux in all veins.

APG: O.F.-normal at 50%
VFI - 2.72 ml/min
2.10 ml/min with superficial occlusion
VV - 75 ml
Ejection Vol - 58 ml Ejection Fraction - 77%
RVF - 51%
Summary: Normal outflow and reflux volumes. Calf muscle pump satisfactory. Elevated RVF

Venous Pressure:

AVP: GSV: sustained high pressure without fall while walking
Dorsal toe vein: Normal fall to 30mm HG, rapid rise (<10 sec)
Arm-foot: Resting: <4 mm. Hg. Difference
Post hyperemia: 7 mm. Hg difference
Summary: Sustained venous hypertension and rapid return to baseline
(Difference between GSV and toe tracings not explained)
Consistent with deep venous obstructive and reflux disease

Summary of Phase II workup and case analysis:

Findings diagnostic of post-thrombotic disease with elements of reflux and of obstruction shown on duplex. Physiologic confirmation of significant obstruction and reflux lacking in APG. Venous pressure consistent with venous disease, both obstructive and reflux.

Further workup needed to find a way to improve his symptoms since his present way-of-life was unsatisfactory.

Phase III.
Ascending venogram: Ascending flow preferentially by superficial veins, even with tourniquet at the ankle. Ankle and upper calf tourniquets required to force flow into severely distorted tibial, popliteal, and SFV-PFV veins. Popliteal vein distorted, becoming obstructed above popliteal space.
Large GSV, main outflow tract from the calf.
The LSV (SSV) ended in a Giacomini vein which ascended to join the saphenofemoral junction. There was no connection between the LSV and the popliteal.
Normal CFV-Iliac-IVC.
No significant calf or thigh perforator veins seen.

Descending venogram: Upright examination with Valsalva revealed:
Non-visualization of SFV
Reflux in distorted PFV down through PFV-popliteal branch into popliteal vein, and then reflux down into anterior tibial and muscular veins. One large lateral branch of the CFV (common femoral vein) showed a competent valve.
GSV showed slight reflux in thigh only. (Valve leaflets seen in GSV.)

CEAP: C2,3,4,5(s); Es; As,p,d; Pr2,3,4,5,12,14,15,18; o12,13,14,15

Analysis of workup:

Life-style limiting venous claudication, pain, and swelling in an otherwise healthy and athletic 47 year old male. Healed ulceration and significant skin changes. The problem was due to post-thrombotic disease which had virtually wiped out the deep venous return in the deep veins. Most of the obstruction was in the lower thigh, extending down through the popliteal into the calf veins. Reflux of greater or less degree was present in all veins except two, and these were the Giacomini vein and the lateral branch of the PFV. The GSV and the perforator veins were not of great importance in the process. The dominant symptoms which limited his lifestyle appeared to be due to poor emptying of the calf. Outflow from the calf was limited by deep vein obstruction in the SFV, poor collaterals, and reflux in the PFV. Outflow channels were the GSV, the Giacomini extension of the SSV, and possibly the competent lateral branch of the PFV (Fig. 1).

Figure 1

Diagram of pre-operative condition determined by duplex scan and venography. A, upper end Giacomini vein with competent valve. B, junction of LSV with Giacomini vein at popliteal level, showing obliteration of branch to popliteal vein. C, incompetent profunda femoris vein with large communication to poplital vein. D, permanently occluded superficial femoral vein. E, lateral branch of common femoral vein with competent valve.

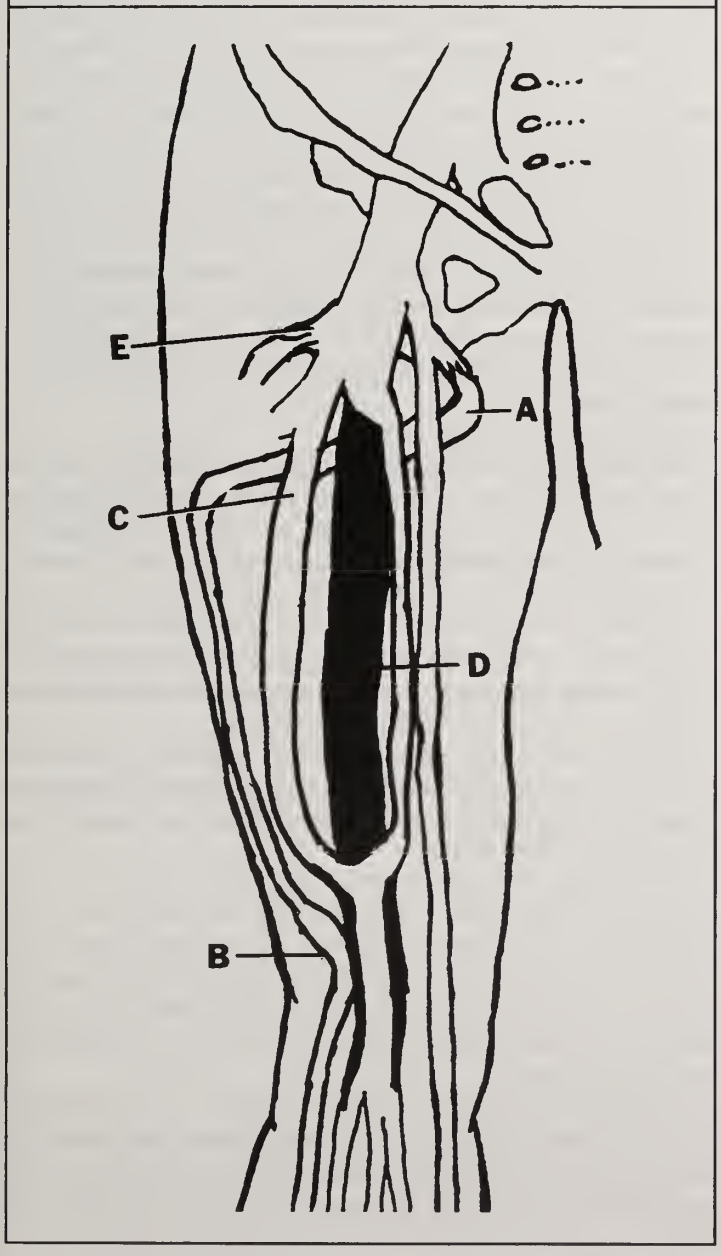
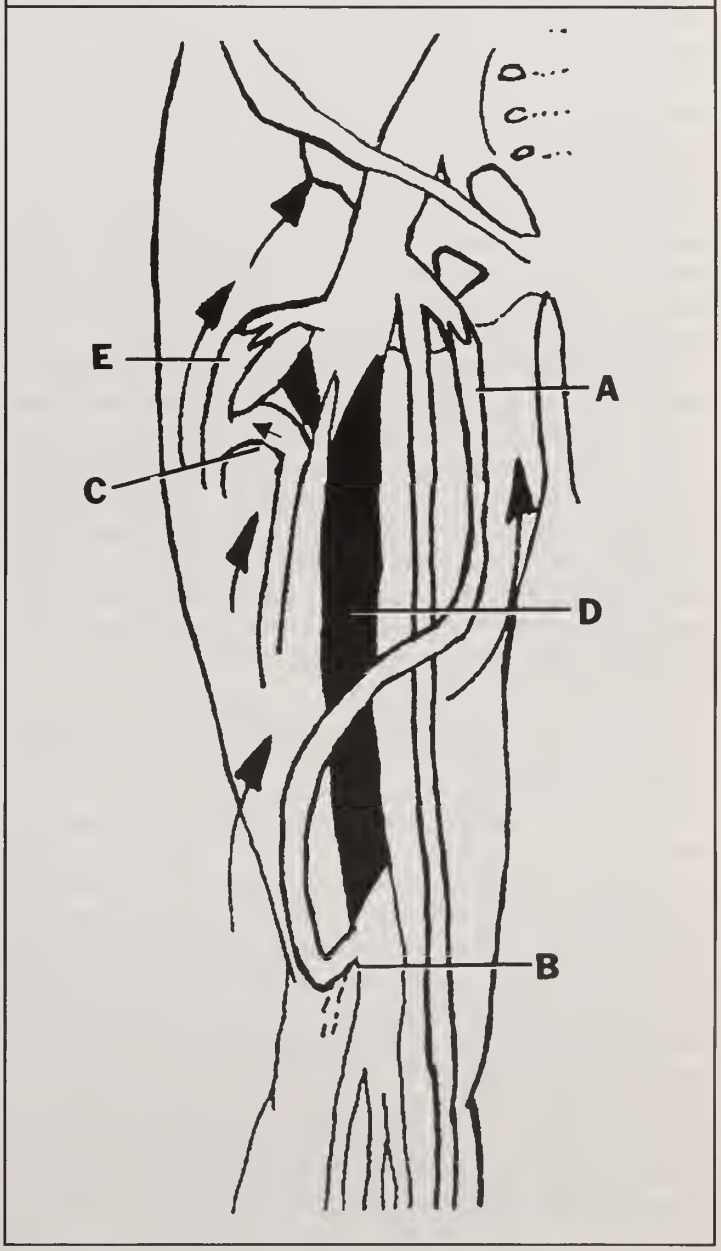


Figure 2

Diagram of surgical procedure. A, upper end of Giacomini vein with competent valve utilized as outflow for the popliteal vein. B, lower end of Giacomini vein disconnected from LSV and anastomosed to popliteal vein to serve as popliteal outflow. C, incompetent PFV disconnected from CFV and transposed to the competent lateral branch of the CFV. D, permanently occluded SFV. E, Competent valve in lateral branch of CFV.



DISCUSSION

DR. O'DONNELL: That was an excellent presentation, and represents one of the largest experiences with this problem.

DR. GLOVICZKI: Well, this is an extremely complex case, no question about it, and I may follow a little bit what Mike was suggesting, try to stay on the conservative side before I would decide on any type of deep vein reconstruction. I'm even thinking of some kind of a May-Husni operation to use the saphenous vein to bypass the obstruction.

DR. O'DONNELL: Do you think they're missing something in the iliac segment?

DR. GLOVICZKI: I certainly would look very, very carefully into that venogram. I don't have large experience repairing deep vein valve incompetence of the profunda femoris vein, that's another option that could be done in this case.

DR. DEPALMA: Tom Wakefield pointed something out that Mike Dalsing emphasized too, that this patient may be suffering from repeated episodes of thrombophlebitis. I would seriously consider long-term anticoagulation and Heparin or low molecular weight Heparin therapy with elevation to see if these would improve his symptoms. If not a surgical intervention can be considered. Dr. Husni was a friend of mine in Cleveland. I did six of these operations. None of them worked so I quit. So I don't see why the May-Husni procedure would help this man, and if the saphenous thrombosed he'd lose his outflow tract.

DR. PERRIN: Conservative treatment and anticoagulation. I have been very disappointed by saphenotibial bypass. I have performed I would say 20 years ago 25 or something like that, and the results were not good. May in Austria and Chris in Germany have the same poor results.

DR. GARCIA-RINALDI: I'd like to propose to Dr. Dalsing that maybe the approach of taking the entire circumference of the vein has been your problem. We have approached this problem by taking a monocusp patch made of the pulmonary artery of human beings, cryopreserved, and we have implanted this in over 50 cases. They've been followed for up to five years. We have not had a single case of thrombosis even though these patients go home on aspirin, and I would propose that as an alternative to the entire circumference replacement. There seems to be a mechanism not known to me that protects this particular patch from thrombosis if you leave the posterior aspect of the host of vein.

DR. RAJU: I think I am not fully understanding what you are saying.

DR. GARCIA-RINALDI: Bnt I'm not proposing a model. I'm telling you I've done it.

DR. RAJU: I am familiar with your earlier work. I urge you to pnblish your latest results.

DR. GARCIA-RINALDI: If you take a monocusp and you place it properly, you will get competence. The problem we've seen or the problem we've had in some of these patients is the actual sizing of the prosthesis because we have had to use whatever LifeNet will send us. However, the bioprosthesis comes as a patch, not as a pulmonary artery trunk. So we are implanting a patch, and this we tested to be totally competent at the time of surgery by releasing the proximal clamp and placing it in the common femoral vein.

DR. DALSING: I really have no specific information how synthetic grafts fail. I feel that the problem with cryopreserved tissue is probably some low-grade rejection response. Certainly if you do not aggressively anticoagulate these patients or if the anticoagulation levels drop or if the patient fails to take his medication, the allograft will fail. I know, at least in animal models, that if you place any kind of synthetic in the venous systems that they'll fail. So I'd be interested to see your data because I would expect to see different resnlts.

DR. TRIPATHI: My first question is for Dr. Dalsing. There is a high incidence of incompetence of your cryopreserved vein valve at six months. I also notice that there is no external support for your vein. Have you tried external support and are the results better with external support?

DR. DALSING: We have not tried external support. I can tell you a little bit about what happens to these veins when they fail. It doesn't seem to be a dilation problem. They seem to fibrose. So I think putting an external support around them would probably make little difference.

DR. TRIPATHI: My second question is for Dr. Raju. It has been seen that nearly 30 to 50 percent of all axillary veins are incompetent. Do you always use axillary veins for femoral vein valve transplant or do you look for superficial femoral vein and popliteal veins of the contralateral limb whenever there is a duplication?

DR. RAJU: No, I don't think you should go to the contralateral limb. You are dealing with a disease which is bilateral in a large percentage of cases. Incompetent axillary vein can be repaired before you insert it in large number of cases.

DR. O'DONNELL: Using the external valvuloplasty technique that Bob has developed, we usually take it from the nondominant arm.

DR. TRIPATHI: My last statement is a comment abont the iliac angioplasty. Learning from our techniques of iliac angioplasty, especially at the aortoiliac junction, we found that unless you use a kissing balloon technique you are going to decrease the lnmen of the opposite side.

DR. RAJU: Not true in the veins.

DR. TRIPATHI: That's what I want to know, whether you are using a kissing balloon technique, and whether you are evaluating the opposite side common iliac vein after doing the ipsilateral common iliac angioplasty, especially when you are advocating putting the stent way up into the IVC?

DR. RAJU: We have not looked at the opposite side in every case. There has been no problem with the opposite side. I don't think the kissing balloon is necessary in the venous system because of lack of rigidity. It's not the same thing as in the artery.

DR. HASANIYA: This question is for Dr. Dalsing. Do you think that the failure rate could be related to other immune process and do you think in your experience that immune suppression might help decrease the failure rate?

DR. DALSING: I can only tell you a little bit about the arterial system where there seems to be cytotoxic T cells that causes much of the problem. So there has been some suggestion that immunosuppressive drugs directed to this T cell population may improve results. I have not had any personal experience with this, but I do believe it is being carefully considered by those involved with cryopreserved tissues.

DR. THORPE: This case represents, I think, a good example of how video phlebography, if you will, could help us understand this patient's problem because by looking at the still images, I can't tell exactly where the stasis is. Is it mostly in the calf, or mostly in the

thigh, or is there any clearance problem through the iliac, as well? Hopefully, in the future, we'll advance towards phlebography with digital imaging. I'd like to ask Dr. Neglen if you've used duplex velocities in the femoral before and after therapy, particularly after stent placement, to assess the flow? This might help you determine whether or not you've got enough stent opening to remain patent.

DR. NEGLEN: Yes. All the patients have duplex ultrasound before and after surgery. Many of them do have decreased augmentation and a lack of respiratory changes before which is abolished by the stenting. However, I think ultrasound is too insensitive a test to detect slight borderline stenosis. For example, the cases of hyperplasia were not detected by ultrasound. They were detected by venogram, and they didn't have any symptoms whatsoever.

DR. GLOVICZKI: Peter, this is a wonderful series that you presented, but the indication seems to be different from our conventional indications of reconstruction for obstruction. I mean, you only had 18 percent of the patients who had greater than two millimeters of mercury pressure difference at best. That to me looks like maybe the circulation in most of these patients is sufficient and you did not really have functional obstruction in most of your patients. So what did you base your indications on?

DR. NEGLEN: Well, as I told you, we're trying to find the actual venous pressures which detect significant stenosis. I think the biggest problem is that in a supine position on an operating or radiology table, it is difficult to increase the venous flow enough to detect significant obstruction. It's a low flow/low pressure area as we talked about yesterday. The question is when you have collaterals, does that mean you have compensated the outflow obstruction, or does it mean that collaterals actually indicate that you have an ongoing outflow obstruction? So these are the kinds of questions we are trying to resolve. Unfortunately, there is no correlation between the intraoperative findings, the preoperative findings pressure-wise, and the postoperative clinical results. Unfortunately, with present diagnostic methods there are patients who have normal pressures in the presence of stenosis, who experience very good results post stenting.

DR. GLOVICZKI: You had ankle-arm pressure measurements? Or did you have any type of outflow obstruction on plethysmography?

DR. NEGLEN: Oh, yes. These patients were fully investigated with ankle-arm pressures and hyperemia pressures and so on. As I showed, the pickup rate for the proximal stenosis by reverse pressure testing, even if they are severe, is not very high. Even though we have been proposing the arm/foot hyperemia test to be the best available test presently, we don't think it is good in all situations, and we're still looking for a better test.

DR. DALSING: I just have one question for Peter too. How do you inject the papaverine?

DR. NEGLEN: Intra-arterially at the level of the femoral artery.

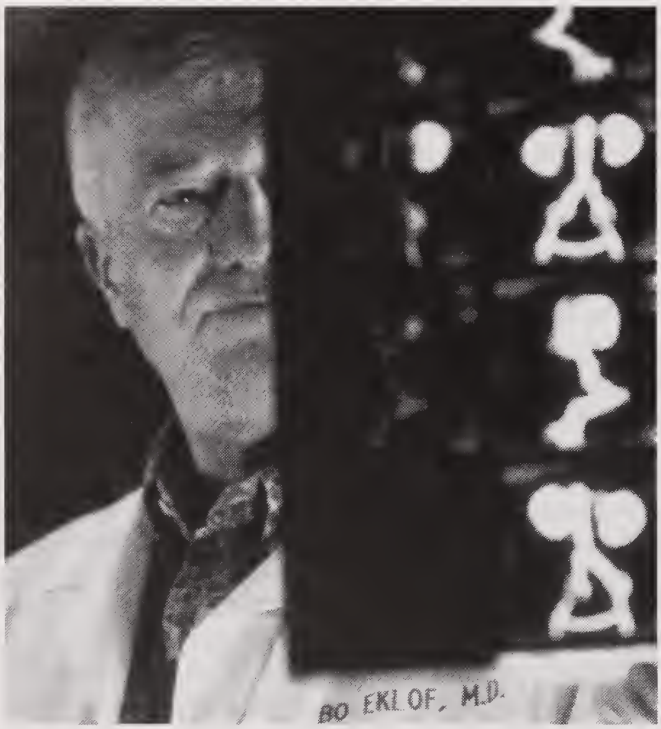
DR. OSMAN: I am one of those unfortunate souls who occasionally have to see 50 patients on a Tuesday afternoon. I have a question to Professor Raju. I may have misheard him, but I understood in this last case that he would have stripped the long saphenous vein which I thought in this particular patient may have made things a lot worse. Did I mishear you or is that the case?

DR. RAJU: No, you didn't misunderstand me. We presented data yesterday to show that you can do it in similar type of situations without any clinical mal sequelae and oftentimes with clinical improvement if there is significant reflux. The paper was in Surgery last year.

SURGICAL MANAGEMENT

DR. KISTNER: We didn't want to operate on the patient, but the patient would not leave without having something done. He said, "My quality of life is so impaired, do whatever you can do. I'm not leaving here until you do something." This led to surgery, even though there were few encouraging findings for a surgical approach. We did have extensive venography of the pelvis and there was nothing abnormal in the iliac vein, so proximal obstruction was not part of the syndrome. We analyzed the case as being severely obstructed in the thigh, compounded by post-thrombotic reflux. Please recall that the patient had a Giacomini vein visualized on the ascending venogram. We disconnected the popliteal termination of the lesser saphenous and moved it down to a more advantageous soft spot on the popliteal vein; this converted the Giacomini vein, which had a valve in it, to an outflow tract for the calf to help the obstruction. We left the greater saphenous vein intact because it was a good outflow tract for the leg. The really non-standard thing we did was to interrupt the profunda femoris vein which was refluxing, and perform an end-to-side transposition between the PFV and the lateral femoral branch because this lateral femoral vein provided a valved outflow for the profunda femoris vein. These procedures were thought to be low risk. The patient post-op felt improved right away. He's now three years post-op. On duplex scan done elsewhere, both of these reconstructions are patent. I spoke to him on the phone this weekend because he lives elsewhere. The patient has returned to hunting. He's back to full-time work. He discarded his pump. He continues to use stockings. At least for three years to this point, he has obtained the result he was seeking.

Join us in the quest for continued medical excellence.



Join your Straub colleagues as we strive for continuing medical excellence.

Straub Clinic & Hospital, Inc. is accredited by the Hawaii Medical Association to sponsor continuing medical education for physicians.

Straub designates this educational activity for a maximum of one credit hour in Category 1 of the Physician's Recognition Award of the American Medical Association. Each physician should claim only those hours of credit that he/she actually spent in the educational activity.

Straub

Partners in health

straubhealth.com

You are invited to attend...

Friday Noon Conference

How to Monitor and Assist the Defense of a Malpractice Claim

Frank L. Tabrah, MD

June 16, 2000, 12:30 - 1:30 p.m.

Doctors Dining Room

Learning Objectives

At the conclusion, participants will be able to:

- Describe the steps involved in a malpractice case; how to prepare and what to expect when your name appears on the subpoena as the defendant.
- Gain knowledge on how the judicial system works and what they hope to find in a malpractice claim.
- Summarize your role as defendant involved in the case and the role you are expected to take in the case.

Friday Noon Conference – Luncheon

Allergic Rhinitis: the Underappreciated, Highly Costly Disease

Alan B. Goldsobel, MD

June 23, 2000, 12:30 – 1:30 p.m.

Doctors Dining Room

Learning Objectives

At the conclusion, participants will be able to:

- Summarize the underlying epidemiology of allergic rhinitis and direct and indirect costs.
- Discuss the utility of oral antihistamines and decongestants as well as intranasal steroids and antihistamines in the treatment of allergic rhinitis.
- Determine the appropriate risks/benefits associated with different treatment interventions in allergic rhinitis.

We would like to acknowledge the Educational Grant from Powers Rx Division, Pfizer Inc.

Friday Noon Conference

Herbal Prostate Agents

Craig Iriye, MD

June 30, 2000, 12:30 - 1:30 p.m.

Doctors Dining Room

Learning Objectives

At the conclusion, participants will be able to:

- Review the biochemistry of OTC agents "for prostate health".
- Identify potential interactions between these agents and prescription drugs.
- Discuss the use of these agents intelligently coming to the office with BPH and in the context of prostate CA.

Please call Fran Smith at 522-4471 for more information.

Space JAM?

Lots of important files? No more room? Don't let a few dollars keep you frustrated.

FREE! FIRST MONTH* Any Size Locker

*Some restrictions may apply

SAFE AND CLEAN ENVIROMENT TO STORE ALL YOUR DOCUMENTS!
"EZ" hours - Open 7 Days a week!
(One of the best in town - truly an EZ Access.)

BBB MEMBER HAWAII

Call Now For FREE TRUCK & DRIVER!

VISA MasterCard



EZ-ACCESS STORAGE SYSTEMS

HAWAII'S LEADING SELF STORAGE FOR OVER 20 YEARS!

CENTRAL AREA (near Ward Ave.) Close to Waikiki, Ala Moana & Downtown. 592-0220

NORTH KING AREA (in Kalihi) Close to Freeway, Kam Heights & Salt Lake. 832-0450

Janssen Pharmaceutica

Is proud to support the Hawaii Medical Journal

World leader in antimycotic research

JANSSEN • PHARMACEUTICA • • RESEARCH FOUNDATION •

Titusville, NJ 08560-0200

®1998 Janssen Pharmaceutica

Aloha Laboratories, Inc.
...When results count

CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

David M. Amberger, M.D.
Laboratory Director

Phone:(808) 842-6600
Fax: (808) 848-0663
E-mail: results@alohalabs.com
http://www.alohalabs.com

Arleen D. Jouxson, Esq.
Attorney at Law



A.K.A. Arlene Meyers, MD, MPH

- Wahiawa pediatrician since 1979
- Associate Clinical Professor, JABSOM
- 1998 Roscoe Pound award winner in health care law
- President & founder of the Hawaii Coalition For Health

NEED HELP?

- with Par. Agreements?
- Understanding health care laws?
- Resolving disputes with health insurers?

CALL 621-8806 (Oahu) for more information or for a free initial consultation at your place of business.

302 California Ave., #209, Wahiawa, HI 96786, Ph: 621-8806; Fax: 622-5599

News and Notes

Henry N. Yokoyama MD

Life in These Parts...

Recently Gov Cayetano proposed fluoridation of our water supply...and Council person Rene Mansho voiced opposition...The issue brought back memories of 30 years ago when HMA joined Manuel Kau (chief, State Dental Officer) in proposing state wide flouridation...Our chief opponent was "Doctor" Kondo of the HOJU KAI...(A popular Japanese lay health movement) Dr. Kondo was a retired English professor (No one made the distinction between professor and physician). We were involved with the HMA Japanese Speakers Bureau and agreed to help promote fluoridation on Japanese radio and press.

One memorable evening, we had Dr. Kau and Shigeo Natori on the KOHO Radio spreading the gospel of fluoridation...the telephone questions came in hot and furious. One elderly lady asked, "If we don't want fluoridated water, what can we do?" Shigeo rose to the occasion: "You can dig your own well," he joked...The radio listeners were stunned...Poor Shigeo, for weeks thereafter, he received hate calls at office and home...The anti-fluoridationists were victorious...They had no sense of humor...

Potpourri I

A San Diego patolman pulled over a driver and told him that because he was wearing his seat belt, he had won $5000 in a safety competition... "What are you going to do with the money?" the officer asked.

"I guess I'll go to driving school and get my license," the man answered.

"Don't listen to him," said the woman in the passenger seat. "He's a smart aleck when he is drunk."

This wakes up the guy in the back seat, who saw the cop, "I knew we wouldn't get far in a stolen car."

Then there was a knock from the trunk and a voice in Spanish, "Are we over the border, yet?"

"Funny Times"

"Too many of us worry about the future." Dr. Smith expained, "Why open the umbrella before it starts raining?"

Psychiatrists don't need to worry so long as other folks do.

Potpourri II

Many years ago, I was doing my OB rotation with a colleague who shared my surname, Porter. One night I was busy repairing an episiotomy with the lady in stirrups and in lithotomy position.

A nurse looked into the room and said to me, "Mrs. S in Room 4 is bleeding. Will you have a look at her?"

"She's not one of mine," I replied, "You'll have to ask the other Porter."

My patient shrieked and almost levitated out of the stirrups.

"Stop!" She commanded, "I want a doctor to do this not a porter."

(Dr. Alan Porter, Victoria)

Medical Tidbits...

Estrogen & the Woman's Heart: Most women don't have heart attacks till after menopause, but supplemental estrogen doesn't always protect the heart after menopause. At the American College of Cardiology Meeting in Anaheim, David Harrington of Wake Forest University School of Medicine reported on a study of 309 women with heart disease. Estrogen by itself or in combination with progestin had no effect on the plaques in women's coronary arteries. (ie for 3 or 4 years...A larger study on the effects of estrogen will become available in 5 more years) The latest studies show that estrogen actually increases heart problems in women during the first year and the heart benefits become apparent only after three years...

Good Reason to Quit: A new study of 34 men who had radiation for prostate cancer found that none of the patients who smoked were potent 6 years after treatment while 2/3 of those who didn't smoke remained potent.

(This month's News and Notes column has been condensed due to space restraints.)

Classified Notices

To place a classified notice:

HMA members.—Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.

Nonmembers.—Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Office Space

ALA MOANA BLDG.—PHYSICIANS WANTED to share space and support services. Interest in physical rehab. preferred. We have flexible rental arrangements starting at one half-day per week. Run your practice with no fixed overhead. Contact Dr. Speers, REHABILITATION ASSOCIATES, 955-7244.

KAPIOLANI MEDICAL CENTER.—OFFICE SPACE available to share in the Kapiolani Medical Center. Call D. Venu Reddy, MD at 944-2002 or 942-7702.

Wanted

PSYCHIATRIST.— Kaneohe residential Program for adolescents seeks consultant two half-days per month. Schedule, duties, compensation negotiable. Contact Administrator: RAINBOW HOUSE 239-2399.

HAWAII PERMANENTE MEDICAL GROUP.— Kaiser Permanente. Hawaii's most established multi-specialty group of 300 physicians recruiting for:

- BC/BE internal medicine hospitalists, staff and Locum Tenen positions available, servicing all hospitalized patients in 200-bed Kaiser hospital on Oahu, position(5) immediately available.
- BC/BE general internist for busy outpatient clinic, inpatient duties (CCU/ICU/ventilator management) and call, practice based in Kona on the Big Island (affiliated with Kona Community Hospital.) Position available mid-August 2000.

Applicants must have a commitment to quality care, patient advocacy, and involvement in patient and professional education. We offer competitive salary, comprehensive benefits, relocation assistance and more.

Send CV to: Physician Recruitment, HPMG, 3288 Moanalua Road, Honolulu, HI 96819 or Fax (808) 834-3994. EOE

(Medical School Hotline continued from p. 240)

would decrease the impact of a limited or variable patient base during clinical rotations.

The recordation of the group- or student-input learning issues, hypotheses and diagnoses allows for ongoing quantitative assessment of the student and the HCP. Because of the student-centered nature of the PBL philosophy, each student has a personal curriculum that could be described by the interactive submissions made during the online processing of the HCPs. This learning issue tracking would be a means for the student and advisor to assess the individual's coverage of material over the four years of school. Furthermore, administration can look at individual, inter- and intra-class learning issue distributions for quality assurance purposes.

In recognition of the ever-increasing potentials of the Internet, JABSOM will expand its present use of digital technologies in an effective, efficient, user-friendly fashion to improve the quality of its graduates.

Reference

1. This article does not address the significant graduate medical or telemedicine projects at JABSOM, nor will it detail the current or future versions of the JABSOM informational website at http://hawaiimed.hawaii.edu.





THE FUTURE OF HEALTH CARE

THE NEW QUEEN'S SAME DAY SURGERY CENTER

The new Queen's Same Day Surgery Center is today's way to deliver high quality health care to essentially well patients. Queen's Same Day Surgery Center features a friendly, experienced staff, leading edge medical equipment and inviting architecture and art which define a holistic, healing environment. The Center's goal is to provide the best surgical experience for patients, physicians and staff alike.

Queen's Same Day Surgery Center is a multi-specialty facility featuring:



- General Surgery
- Ophthalmology
- Plastic & Cosmetic Surgery
- Dermatology
- Laser Surgery
- Ear, Nose & Throat procedures
- Orthopedics
- Gynecological Services
- Dental Services
- Pain Management

The new Same Day Surgery Center is a part of The Queen's Medical Center's ongoing commitment to ***Building Hawaii's Health Care Future***.

www.queens.org

THE QUEEN'S MEDICAL CENTER

Hawaii's Healthcare Leader

The Weathervane Russell T. Stodd MD

The Internet Highway? That Sound like a Place that is Long and Boring and Kills 20,000 People a Year.
For those not acquainted with the Internet, take notice. A primary on-line source of information is surgicaleyes.org. While the great majority of patients walk away delighted with the visual results, the website is posted to disseminate information and stories about unsuccessful refractive surgeries. Moreover, in their constant attempts to provide balance, reporters are pleased to relate incidents of dry eyes, halos, and accommodative weakness. Both Time Magazine and ABC's 20/20 ran feature stories of unhappy patients, and 20/20 included a conservative ophthalmologist who discussed surgeons who are eager to rush in refractive surgery (for others).

Never Miss a Chance to Shut Up.
The first hand held cell phone call was made April 3, 1973. Currently more than 50 million Americans have cellular phones, and that number is expected to increase by 30 million more by the end of the year. More than 85% of cell phoners admit that they use the device while driving, some occasionally, but 27% admit to using the phone in at least half their trips. The rate of auto crashes in such events is roughly equal to that of driving under the influence. The National Highway Traffic Safety Administration has found that dialing or holding the head set is not the cause so much as talking. Drivers get distracted while yakking and as a result pay less attention to the road. Most accidents occurred in clear view and involved other cars or large objects. The solution may be in stricter laws regarding inattention, attempts at education, or perhaps technology. Just remember, every day it gets more dangerous out there.

Only in America Would a Guy Invent Crack – Something to Top Cocaine!
In Georgia, the Supreme Court ruled that the informed consent law does not require the physician to disclose to his/her patient, aspects of their personal life which might adversely affect professional care. A surgeon addicted to cocaine had a seizure from an overdose, and then sought help. A patient brought suit for fraud and battery, claiming the doctor had a duty to reveal his addiction at the time of surgery. The operation on the patient's penis resulted in a painful 90 degree curvature with inability to have intercourse. A lower court ruled that the doctor had a duty to reveal the addiction to his patient, and a succession of similar suits sprang up in a dozen states. Now, however, the Georgia Supreme Court reversed the decision, stating a professional's failure to disclose personal factors does not constitute an independent and distinct fraud action that is separate from a malpractice action. The Medical Association of Georgia and the AMA had filed briefs and letters stating that the law provides adequate redress through malpractice action, and the courts should not create a second cause of action in such cases.

Timing has an Awful Lot to do with the Outcome of a Rain Dance.
Hubris rules in the White House of lame duck William J. Clinton. On three occasions he vetoed legislation a Republication congress offered to restructure welfare. Then he checked the polls and signed on, with the encompassing statement that now he had ended welfare in America as we have known it. Now he has done it again, almost dislocating his shoulder patting himself on the back as he signed the bill repealing the earnings limit for Social Security recipients. "This law has long seemed senseless to me. This should be a happy day for Americans of all ages today because a very good thing has been done for the future." What was not mentioned is that this repeal has been the Republican Party platform since 1964, and on three prior occasions President Clinton vetoed legislation containing the repeal. Thank you, Slick Willie!

Medical Privacy – Patients Must be Allowed to Pull Down the Blinds in their Glass Houses.

In Florida, a Humana physician was terminated as a participant in their plan. When Humana demanded the patients medical records, the doctor refused. Humana claimed the records as "the property of Humana," and that the records be handed over "immediately upon demand." The doctor returned records of patients who so authorized, but withheld the rest, stating that the records belong to the patients. Humana sued, and the appellate court upheld the doctor. The law limits the disclosure of medical records without the patient's consent, his doctor, or his legal representative, and Humana had no authority to obtain the records without the patient's consent. Humana's legal people are at the drawing board considering possible changes in contract language.

At Humana the Milk of Human Kindness is sometimes Skim.
And here's another Humana story. A child afflicted with cerebral palsy required leg braces, and needed specialized care, including speech, occupational and physical therapy. The family enrolled in a Humana plan because they were promised that ongoing care would be provided. Subsequently, Humana removed the child from the program and denied all benefits. As a result of the lack of therapy, her condition deteriorated, and the family sued the Humana Health Insurance Company. The jury handed down a verdict of $79.5 million in damages, all but $1.1 million of it to "send a message," as one juror put it, indicating that the jury felt the health plan acted without conscience. Humana plans to vigorously pursue an appeal. The lawyers win again.

Learn The Safe Harbor Laws, but not by Accident.
HHS Inspector General June Gibbs Brown has released some new final "safe harbors" to the federal anti-kickback statute. (1) Non-surgeons can invest in Medicare-certified ambulatory surgery centers. Previously such investments in ASCs were limited to surgeons. (2) A referring doctor can arrange with a specialist to refer the patient back to the first doctor when the specialist's therapy is completed (but it doesn't protect against splitting a global fee from a federal program). (3) Licensed physicians who practice in a group, can invest in that group, but not in separately owned health care services, such as an imaging center - if the group meets the Stark law definition of a group practice.

Put a Government Agency in Charge of the Sahara Desert, and it would Run Out of Sand.
The insurance and the managed care lobbyists were unable to sidetrack Congress on the patient-protection issue, but now the Institute of Medicine has done it easily. Asserting that as many 98,000 people are killed each year by errors by physicians and related medical care, the IOM has lawmakers rushing to orate and legislate. Senator Teddy Kennedy was the first to draft a bill. He would create a national safety center, a mandatory system of reporting and collecting information about fatal and serious errors, set safety standards for health care institutions participating in federal programs, provide grants for programs designed to reduce or prevent medical mistakes, have the FDA develop a program to minimize confusion in the prescribing and dispensing of drugs. Never mind that the IOM data is old and limited in scope, we are certain to have an additional agency to suck up medical dollars.

How do you Keep Sex Fresh? Put it in Tupperware.
According to a story in the Wall Street Journal, Denmark wants to become the global center for sperm banks. Danes are perceived as blond and blue eyed, and their sperm is coveted for its high biological quality. Stating that it makes good economic sense for the industry to be consolidated, Ole Shou, who heads Denmark's leading sperm bank, *Cryos International*, stated, "We think we can be the McDonald's of sperm."

ADDENDA
- ❖ The eye of the ostrich is bigger than its brain.
- ❖ 40% of medical school graduates owe more than $150,000, and currently 46% of students entering medical school are female.
- ❖ Irish coffee provides the four essential food groups - alcohol, sugar, caffeine, and fat.
- ❖ Carpe per diem - seize the check.

Aloha and keep the faith —rts■

One of a kind.



Unmistakable.

At MIEC, we know what it means to stand out in the crowd. Twenty-five years ago, we started the West's first doctor-owned, not-for-profit malpractice insurance company. The idea quickly caught on, and now there are dozens of "doctor-owned" companies throughout the country.

But there is only one MIEC. Our rate and dividend history is unparalleled. Guess that's why we don't need a large sales or marketing staff. Our track record speaks for itself.

The original is still the best. Call us.

Medical Insurance Exchange of California
6250 Claremont Avenue, Oakland, California 94618
Telephone 800-227-4527 www.miec.com
HAWAII CLAIMS OFFICE: 1360 South Beretania Street, Honolulu, Hawaii 96814

Our 25th Anniversary, 1975–2000

Sponsored by Hawaii Medical Association





LITTLE THINGS MEAN A LOT.
LOTS OF LITTLE THINGS MEAN EVEN MORE.





MORE HORSEPOWER	
Nissan Pathfinder	240 hp
Jeep Grand Cherokee	235 hp
Toyota Land Cruiser	230 hp
Ford Explorer	215 hp
Lexus RX300	220 hp
Mercedes ML320	215 hp
Isuzu Trooper	215 hp
Toyota 4Runner	150 hp

MORE CARGO SPACE	
Nissan Pathfinder	85.0 cu.ft.
Jeep Grand Cherokee	72.3 cu.ft.
Ford Explorer	81.0 cu.ft.
Toyota 4Runner	79.8 cu.ft.

BETTER DRIVEABILITY

"The purity of line goes beneath the skin, where the Pathfinder has the agility and sure-footedness of a mountain goat." — *Automobile Magazine*

INTRODUCING THE 2001 NISSAN PATHFINDER.

The big, brawny 2001 Nissan Pathfinder is finally here and once you drive it, that's all she wrote. It's faster, has more cargo room and drives better than anything in its class. But if

Hawaii medical journal
v. 59
no. 6
June 2000
Received on: 07-12-2000
Brown University Library
SCI

N.

raii.com

New City Nissan - Ala Moana 524-9111 • Tony Nissan -
Infiniti - Nissan Motor Sales - Honolulu 836-0848 (Airport) • King Winc
Kaneohe 235-6433 • Cutter Nissan of Maui - Kahului 877-9009
Kauai Nissan - Lihue 245-6731 • Kamaaina Nissan - Hilo 935-3741 • Kona Auto Center - Kona 329-4408

HAWAII MEDICAL JOURNAL

1-SIZE
R15
H25x
SCI

July 2000 Volume 59, No. 7 ISSN: 0017-8594



HAWAII MEDICAL ASSOCIATION 1856

Stability
Commitment
And a good set of ears

Listening. It's a valuable skill, particularly in today's complex health care arena. To help ensure high-quality care and affordable coverage for our members, HMSA actively seeks out the knowledge and expertise of Hawaii's physician community.

As participants of HMSA and Health Plan Hawaii boards and advisory/liaison committees, hundreds of Hawaii physicians, dentists and other health care professionals provide valuable input regarding medical policy, health plan benefits, quality assurance and other important health care issues. Their efforts have a direct, meaningful impact on HMSA members and the community at large.

Here are the many boards and panels that enable HMSA to make sure that Hawaii's physicians are indeed heard:

HMSA Board and Committees
Board of Directors
Benefits Administration Committee
Fee Review Committee
Medical Review Committee
Quality Oversight Committee

Health Plan Hawaii Board and Committees
Board of Directors
Quality Management Committee

Physician Liaison Committees
Honolulu Physician Liaison Committee
West Oahu Physician Liaison Committee
Windward Oahu Physician Liaison Committee
East Hawaii Physician Liaison Committee
West Hawaii Physician Liaison Committee
Kauai Physician Liaison Committee
Maui Physician Liaison Committee
Vision Liaison Committee

Program Advisory Committees
Asthma Guidelines Advisory Group
Credentialing Committee
Disease Management Physician Advisory Committee
HealthPass Medical Advisory Committee
Pharmacy and Therapeutics Advisory Committee
- Asthma/Allergy Subcommittee
- Cardiology Subcommittee
- Dermatology Subcommittee
- Endocrinology Subcommittee
- Ophthalmology Subcommittee
- Psychiatric Subcommittee

Quality Improvement Committee
WorkComp Hawaii Advisory Committee

For a list of current board and committee physician membership, please call 948-6330 on Oahu or toll-free 1 (800) 790-4672 from the Neighbor Islands.

HMSA and Health Plan Hawaii. Health plans that listen.

HMSA Blue Cross Blue Shield of Hawaii
Choices for a Healthier Hawaii

Health Plan Hawaii™
A Federally Qualified HMO Affiliate of HMSA

Managed Care Organizations ★★★★ NCQA Accreditation EXCELLENT
For Commercial HMO

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
Vincent S. Aoki MD, Benjamin W. Berg MD, John Breinich MLS, Satoru Izutsu PhD, James Lumeng MD, Douglas G. Massey MD, Myron E. Shirasu MD, Frank L. Tabrah MD, Alfred D. Morris MD

Journal Staff
Managing Editor: Becky Kendro
Editorial Assistant: Drake Chinen

Officers
President: James Lumeng MD
President-Elect: Philip Hellreich MD
Secretary: Gerald McKenna MD
Treasurer: Paul DeMare MD
Past President: Patricia L. Chinn MD

County Presidents
Hawaii: David Camacho MD
Honolulu: Walter K.W. Young MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Patrick Aiu MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 1999 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 292

Medical School Hotline
Steven E. Seifried PhD 292

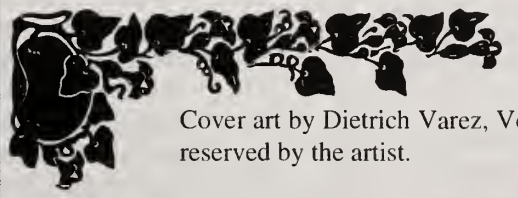
A Review of the United Kingdom Prospective Diabetes Study (UKPDS) and Discussion of the Implications for Patient Care
Jun Srimanunthiphol MD, Ralph Beddow MD, FACP and Richard Arakaki MD 295

The Cell Cycle
Niten Singh MD, CPT, MC, Robert B. Lim MD, CPT, MC and Michael A.J. Sawyer MD, LTC, MC 300

Dexamethasone Use in Adult Meningococcal Meningitis
Lisa Hui, Medical Student IV, MBA and Jinichi Tokeshi MD 308

Classified Notices 313

Weathervane
Russell T. Stodd MD 314



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

BB 63 USS Missouri

One of the greatest ships of WWII, the Korean conflict and also the Persian Gulf war now rests permanently at Pearl Harbor.

Editorial

Norman Goldstein MD
Editor, Hawaii Medical Journal

Resumption of Individual Manuscripts

Our numerous "Special Issues" have backlogged the excellent individual manuscripts awaiting publication.

In this issue, we present the United Kingdom Diabetes Study, which might well be published in Lancet or the New England Journal of Medicine, but because of the incidence of diabetes mellitus in Hawaii especially in our native Hawaiians, we are pleased to feature this paper. Mahalo to Doctors Beddow, Arakaki, and Srimanuthiphol for their report.

Lt. Col. Michael Sawyer and his associates in the Surgery Department at Tripler have submitted a very concise manuscript on the Cell Cycle. As you will discover, much has occurred since some of us attended Medical School pertaining to molecular biology research. The recently held seminar on genetics and molecular biology sponsored by Queen's Medical Center, the Ohio State University and National Cancer Institute, held here in Hawaii in February 1999, attested to the quantum leap in genetics findings. The Cell Cycle manuscript by Sawyer et al is reader friendly, containing both theoretical and practical information.

Our final manuscript, presented by fourth-year medical student Lisa Hui and her preceptor Dr. Jinichi Tokeshi is the case report of a man with severe meningococcal meningitis treated with antibiotics plus dexamethasone. Mahalo, Dr. Tokeshi and Ms. Hui, for their interesting submission.

PHYSICIANS
Air Force Healthcare.
Good Pay.
Professional Respect.

Why Do You
Think We Say "Aim High"?

Experience the best of everything. Best facilities. Best benefits. Outstanding opportunities for travel, 30 days vacation with pay, training and advancement.

For an information packet call
1-800-423-USAF
or visit www.airforce.com.

You'll see why we say, "Aim High."

AIM HIGH
AIR FORCE
HEALTH PROFESSIONS

Medical School Hotline

The Role of Family Practice in Medical School Education

Kay A. Bauman, MD, MPH
Interim Co-Chair, Department of Family Practice and Community Health
John A. Burns School of Medicine, University of Hawaii at Manoa

In February, 1993, the Liaison Committee on Medical Education (LCME) endorsed a document giving family medicine its necessary place in medical education. For the first time the Committee stated: "All schools must provide broad-based clinical education programs that equip students with the knowledge, skills, attitudes and behaviors necessary for further training in the practice of medicine. Instruction and experience in patient care must be provided in both ambulatory and hospital settings. All schools must offer a core curriculum in primary care, utilizing the disciplines or multi-disciplinary approaches involved in the delivery of such care. Clinical education programs involving patients should include disciplines such as family medicine, internal medicine, obstetrics and gynecology, pediatrics, psychiatry and surgery. Schools that do not require clinical experience in one or another of these disciplines must ensure that their students possess the knowledge and clinical abilities to enter any field of graduate medication education."[1] This document culminated a 10-year process that coincided with increased public demand for more broad-based physicians available to the American public for primary care.

The W.K. Kellogg Foundation conducted a health care consumer poll in 1994 looking at attitudes toward the delivery of health care in local communities and how these same consumers interact with the health care system. The summary of findings showed an overwhelming belief that the American public should make more use of family doctors (84%) rather than medical specialists (50%). They also supported the government spending its training money either equally on the training of generalists and specialists (46%) or that the government should double spending on training generalists over specialists (33%). These same consumers were more likely to turn to generalists (48%) rather than specialists (29%) to meet their health care needs; for family members the comparative numbers were 59% saw generalists and 28% specialists.[2]

The public demand for more generalists has been going on for some time. It has resulted in Family Practice being established as a specialty in the 1960's culminating in the establishment of the American Board of Family Practice in 1969, which then administered its first certifying exam in 1970. It mandated recertification from the beginning! Although initial requirements to sit for the Boards did not mandate a 3-year residency, rather required at least 3 years of practice and 50 Continuing Medical Education (CME) credits annually, the Board allowed no one to "grandfather" in. All had to take the certifying exam. Since 1978, a 3-year FP residency has been required to sit for Boards. In the U.S., 10 of 125 medical schools still do not have departments of Family Medicine, although

all states now have Family Practice Residencies. Fifteen medical schools do not require training in Family Practice.

The John A. Burns School of Medicine, although a relatively young medical school, did not begin with a Family Practice department. For many years it centered clinical training around the 5 disciplines of internal medicine, obstetrics and gynecology, pediatrics, psychiatry and surgery. Under the leadership of Dean Christian Gulbrandsen, M.D., a department was established in 1992. From the beginning, the department took on a 2-fold task: (1) establishing a required 3rd year clinical clerkship that had parity with other clerkships, and (2) establishing a Family Practice residency program. Both goals were met in late June 1994! Since the Class of 1996, all JABSOM graduates have experienced 7 weeks of ambulatory Family Practice training in their third year, equal in length to their training in obstetrics and gynecology, pediatrics, psychiatry and surgery. This exposure to and experience with family physicians and family practice education has changed the specialty choice of JABSOM graduates from an average of 3% per year for years 1988 to 1992 to

1993	5 (9% of class)
1994	10 (17% of class)
1995	13 (24.5% of class)
1996	6 (13% of class)
1997	17 (32% of class)
1998	16 (28% of class)
1999	13 (24% of class)
2000	12 (23% of class)

The JABSOM Family Practice residency has graduated 23 family physicians, all but 3 of whom practice in Hawaii or the Pacific Basin, and will graduate 6 more this year. Fifteen practice in rural or underserved areas of Hawaii or in the Pacific Basin.

The Family Practice clerkship emphasizes ambulatory or outpatient teaching. Students rotate with community family physicians who in addition to providing competent comprehensive care to their patients take on this teaching role. These physicians see patients of all ages from newborn to the elderly, emphasize caring for families, and teach additional skills stressed in FP training that may be overlooked in other primary care disciplines. For example, students (and residents) are expected to learn/master a significant amount of skill in outpatient gynecology, dermatology, sports medicine, and office orthopedics. Training brings attention to the doctor-patient relationship, both during clinical encounters, and in required seminars. Hawaii's diverse ethnic and cultural environment requires that students gain knowledge and skills in cross-cultural communication and understanding. Family physicians routinely care for depressed persons, anxious persons, persons who have experienced abusive or violent relationships, and persons with addiction problems, to alcohol, street drugs or nicotine. Family physicians, and thus training environments, emphasize prevention: simple things such as immunizations (flu shots, pneumonia and varicella vaccines); contraception; screening for colon, cervical, breast and prostate cancers; and an emphasis on cardiovascular health that addresses regular exercise, healthy eating habits, evaluation of cholesterol levels and consideration of family risk history.

A primary care physician often is the steersman for a patient through a complex medical system, whether the initial diagnosis requiring referral is a hip fracture or breast cancer, developmental delay in a baby or toddler, or a suicide attempt by a teenager or lonely senior citizen. This partnership approach places on the family physician an important advocacy role for his or her patient. The continuous role of patient education accompanies all of the above roles.

A somewhat new "buzz-phrase" in academic medical environments and in particular, Family Practice education, is "evidence based medicine (EBM)." It is applying appropriately what is learned from the literature to patient care. When this contrasts with previous physician behavior, it is a challenge to change. Skills in EBM are a part of student, resident and faculty education as a way to keep pace with changes in medicine and its appropriate application. Epidemiology of a disease or condition is included at all levels of student education at JABSOM. It is the way a primary care physician knows which patient may be at risk for what.

The Family Physician is required to have a breadth of clinical knowledge and skills topped by an outstanding physician-patient relationship. Above all, the family doctor must be an astute diagnostician. Students are trained to manage ably the 20 or 30 most common outpatient diagnoses seen in FP as a discipline but also included are the less common, even rare diagnoses on the list of differentials.

The significant role of a Family Practitioner can be illustrated by a short case example from a training site. A young adult was presented to the FP clinic as a follow up from an Emergency Room visit. Requested was an assessment of the adequacy of his oral antibiotics for a severe infection– a series of ulcers on both legs. The patient reported the sores were worsening in spite of his adherence to the prescribed antibiotics. A routine impetigo or cellulitis should have been responding. A carefully encouraged history uncovered that this patient had a history of inflammatory bowel disease (IBD) treated some years previously. Once in remission, all medications had been discontinued. Now it was important to initiate steroids immediately, attention given for the likely recurrence of the IBD, and careful management assumed for this person's wider problem.

Family Practice has a permanent place in medical education. The faculty of the Department of Family Practice and Community Health accept the challenge of continuing to train outstanding primary care physicians for Hawaii and the Pacific Basin.

References:

1. Functions and Structure of a Medical School: Accreditation and the Liaison Committee on Medical Education; Standards for Accreditation of Medical Education Programs Leading to the M.D. Degree. 1993 and updated 9/1998.
2. What the Public Values in its Health Care System, W.K. Kellogg Foundation, Communications Consortium, Washington, D.C. 1994.

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA

A Review of the United Kingdom Prospective Diabetes Study (UKPDS) and a Discussion of the Implications for Patient Care

Jun Srimanunthiphol MD, Ralph Beddow MD, FACP, Richard Arakaki MD

Introduction

Diabetes Mellitus is a chronic illness that increases the risk of microvascular complication and results in blindness, kidney failure, and lower extremity amputations, and macrovascular complication of coronary artery disease and stroke. In the State of Hawaii, an estimated eight to ten percent of the population have diabetes mellitus, i.e. about 80,000 to 100,000 individuals, primarily adults with type 2 diabetes. Alarmingly, native Hawaiian adults over 30 years of age have been identified with a diabetes prevalence rate of 20%. Several studies clearly document the increasing rate of diabetes among native Hawaiians over the past 30 years. Based on recent data, it is estimated that about 20,000 adult native Hawaiians (18-20% prevalence rate) have diabetes mellitus.[1] It would appear that interventions to prevent diabetes and diabetic complications receive the highest priority in the effort to improve the health status of the people of Hawaii, especially native Hawaiians.

Two major intervention trials have clearly demonstrated that intensive glycemic control prevents and delays the development of microvascular complication in patients with type 1 diabetes: the Diabetes Control and Complications Trial (DCCT) and the Stockholm Diabetes Intervention Study (SDIS).[2,3] Results from a randomized prospective 6-year study in Japan show that intensive insulin treatment of type 2 diabetic patients reduces microvascular complication.[4] Many studies have demonstrated the association of hyperglycemia with macrovascular complications of ischemic heart disease and stroke and increased cardiovascular disease risk factors, e.g., dyslipidemia, hypertension, and obesity. The 12-year cardiovascular mortality of men screened in the Multiple Risk Factor Intervention Trial (MRFIT) showed that diabetic patients consistently had higher cardiovascular mortality than non-diabetic men matched for one or more of the major risk factors for CVD.[5] The data from the MRFIT study suggests that glycemic control in type 2 diabetes is an important and independent risk factor for CVD. Still, results of randomized controlled clinical trials that examines the effect of normalized blood glucose levels in type 2 diabetic patients on macrovascular endpoints have been inconclusive and somewhat controversial.[6,7]

The United Kingdom Prospective Diabetes Study (UKPDS) is the longest and largest prospective clinical study of type 2 diabetics. Started in 1977, newly diagnosed type 2 diabetic patients were recruited. The aim was to determine whether an "active" pharmacological program (intensive) of hyperglycemic management results in a better long-term outcome than a diet and exercise program (conventional).

The UKPDS was designed to answer the following questions:

1) If high blood glucose levels are more intensively treated in people with type 2 diabetes, could serious complications of diabetes be prevented or delayed, and are there any advantages or disadvantages of the various pharmacological interventions that lower blood glucose levels?
2) Would intensive treatment of high blood pressure in type 2 diabetic patients reduce the risk of diabetes complications, and are there any advantages or disadvantages of the various pharmacological interventions that lower blood pressure?

UKPDS Study Design and Results

Between 1977 and 1991, 7616 patients with newly diagnosed type 2 diabetes, ages 25-65 were referred by general practitioners to the 23 participating UKPDS hospitals, and 5102 patients were recruited into the study. After a 3-month diet program, 4209 patients were enrolled into the study of which 3867 patients who had a mean fasting plasma glucose concentrations of 6.1-15 mmol/L (110–270 mg/dl) were randomly assigned to sulfonylurea (chlorpropamide, glibenclamide, glipizide), insulin, and conventional treatment groups (baseline characteristics are presented in Table 1). Patients in the conventional treatment group attended clinic every 3 months and received dietary counseling with the aim of maintaining near-normal body weight and maintain FPG levels below 15 mmol/L (270 mg/dl) without symptoms of hyperglycemia. If marked hyperglycemia or symptoms occurred, patients were secondarily randomized to sulfonylurea, insulin or metformin treatment. There were three measures of outcomes for comparison between conventional and intensive treatment; 1) any diabetes-related endpoint (sudden

Correspondence to:
Richard Arakaki, MD
Department of Medicine
1356 Lusitana St., 7th Floor
Honolulu, Hawaii 96813
Phone 586-2910, FAX 586-7486
e-mail rfarakak@hawaii.edu

death, death from hyperglycemia or hypoglycemia, fatal or non-fatal myocardial infarction, angina, heart failure, stroke, renal failure, amputation, vitreous hemorrhage, retinopathy requiring photocoagulation, blindness in one eye, or cataract extraction), 2) diabetes-related death (death from myocardial infarction, stroke, peripheral vascular disease, renal disease, hyperglycemia or hypoglycemia, and sudden death), and 3) all-cause mortality.

Table 1. Baseline characteristics of patients in conventional and intensive-treatment groups

Character	Conventional (n=1138)	Intensive (n=2729)
Age	53.4	53.2
Sex		
Male/Female	705/433	649/444
Ethnicity		
(%Caucasian)	81	81
Weight (kg)	78.1	77.3
Body mass index (kg/m2)	27.8	27.5
Blood Pressure	135/82	135/83
Fasting plasma glucose(mmol/L) (mg/dl)	8.0 (7.1-9.6)	8.1 (7.1-9.8)
HbA1C	7.05	7.09
LDL cholesterol (mmol/L)	3.5	3.5
Serrogate clinical endpoints		
Retinopathy (%)	36	36
Proteinuria (%)	2.1	1.7
Plasma Creatinine (mmol/L) (mg/dL)	81 (66-99) 0.92	82 (67-100) 0.93

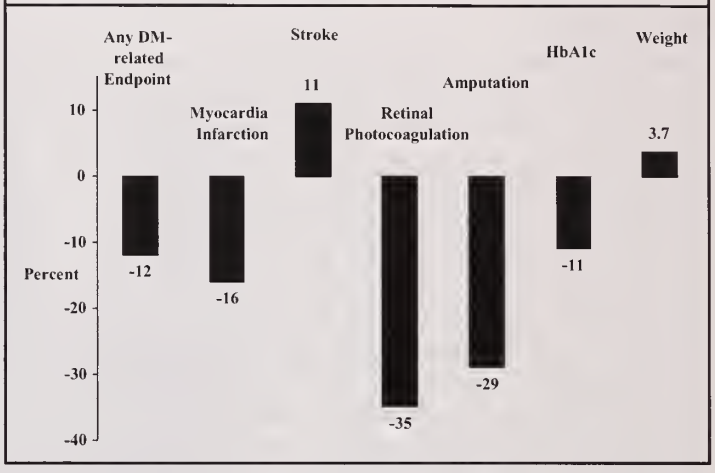
Intensive treatment with sulfonylureas and insulin[8]

The FPG and HbA1c levels in the conventional group increased steadily from the beginning of the study compared to the intensive group which had an initial decline in FPG and HbA1c levels within the first year, but subsequently increased with time similar to that seen in the conventional group. Median HbA1c for each 5-year period of follow-up in the intensive and conventional groups were 6.6% and 7.4% respectively for the first period, 7.5% and 8.4% for the second, and 8.1% and 8.7% for the third period. The median 10-year HbA1c values with chlorpropamide (6.7%), glibenclamide (7.2%), or insulin (7.1%) treatments were each significantly lower than with conventional treatment (7.9%).

The data from 2729 patients intensively treated with sulfonylureas and/or insulin achieved an average HbA1c level of 7% (6.2-8.2) over 10 years and showed a 12% lower rate of diabetes-related endpoints than 1138 patients treated with conventional diet and exercise program with an average HbA1c level of 7.9% (6.9-8.8). Most of the risk reduction was attributed to the 25% lower rate of microvascular endpoints; retinopathy (requiring photocoagulation) and albuminuria (Figure 1). There was a 16% reduction in myocardial infarction rate in the intensive treatment group as compared to the conventional group, but this difference was not statistically significant (p=0.06). Differences in any microvascular or macrovascular endpoint were not observed between the three agents used in the intensive treatment group with the exception of the chlorpropamide treatment group which failed to show reduced rate of retinopathy requiring photocoagulation.

As expected, patients in the intensive treatment group had significantly more hypoglycemic episodes than patients in the conventional group. The rates of major hypoglycemic episodes (reactions requiring assistance from others for recovery) per year were 0.7% with conventional treatment, 1.0% with chlorpropamide, 1.4% with glibenclamide, and 1.8% with insulin. Additionally, there was significant weight gain in the intensive group (mean 2.9 kg) than in the conventional group (p<0.001), and patients assigned to insulin therapy had greater gain (4.0 kg) than those assigned chlorpropamide (2.6kg) or glibenclamide (1.7kg).

Figure 1. Relative Risk Reduction of the Aggregate and Single Endpoints of Intensive versus Conventional Treatment



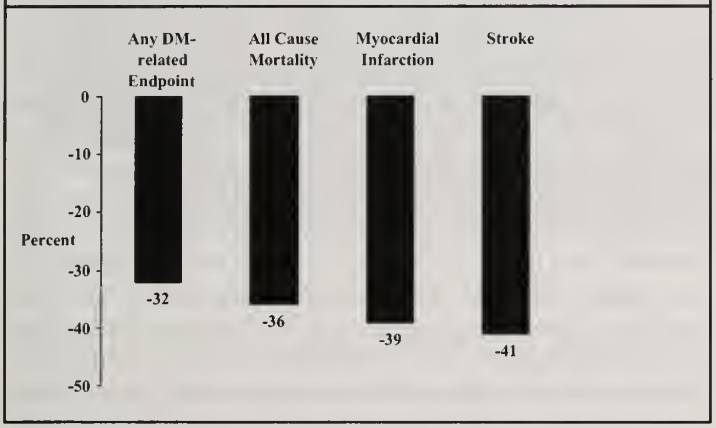
Metformin treatment in overweight patients[9]

Insulin resistance is a key feature of type 2 diabetes, especially when obesity is present. Metformin is a biguanide that decreases blood glucose concentration by mechanisms different from those of sulfonylurea or insulin yet poorly understood. Treatment with metformin results in suppression of endogenous hepatic glucose production and enhanced glucose uptake by muscle [10]. In the UKPDS, 1704 newly diagnosed, overweight (> 120% ideal body weight) type 2 diabetic patients were randomized to receive either conventional treatment, primarily diet control (n=411), or treatment with metformin (n=342), chlorpropamide (n=265), glibenclamide (n=277), or insulin (n=409). Treatment in the metformin group was started with one 850 mg tablet per day, then twice a day and then 1700 mg in the morning and 850 mg with the evening meal. In the metformin group, there was a decrease in FPG and HbA1c levels in the first year, with a subsequent gradual rise in both variables. The median HbA1c level during the 10 years of follow-up was 7.4% in the metformin group and 8.0% in the conventional group. The metformin group showed significant 32% lower risk of any diabetes-related endpoint, including a 36% reduction in diabetes-related death and all-cause mortality as compared to the conventional group. Furthermore, a significant lower risk of myocardial infarction (39%) and macrovascular diseases (30%) in the metformin group (myocardial infarction, sudden death, angina, stroke, and peripheral disease) was observed (Figure 2). Similar macrovascular complication risk reduction was seen in the metformin group as compared to the sulfonylurea or insulin

groups. The rate of major hypoglycemic episodes was lower than patients taking sulfonylureas (1.2% in chlorpropamide group, 1.0% in glibenclamide group, 2.0% in insulin group and 0.6% in metformin group). There was no significant change in body weight between metformin group and conventional group.

Additional 1234 patients, both non-overweight and overweight, who were initially started on sulfonylurea therapy, were randomly assigned to early addition of metformin or continued sulfonylurea treatment if blood glucose profiles deteriorated. The comparison of the combination treatment arms with and without the addition of metformin to sulfonylurea-treated patients produced some unexpected findings. The addition of metformin to sulfonylurea was associated with a 96% increased risk of diabetes-related death and 60% all-cause deaths as compared to the sulfonylurea only group. The investigators completed a meta-analysis and an epidemiological analysis of these results and could not substantiate the finding. Still, the data demonstrated a nearly two fold increase in mortality with combination metformin-sulfonylurea therapy irrespective of glycemic control.

Figure 2. Relative Risk Reduction in the Incidence of Clinical Endpoints of Metformin versus Conventional Treatment



Blood pressure control and diabetic complication1[11,12]

The UKPDS also compared macrovascular and microvascular complications with blood pressure control in a subgroup of 1,148 hypertensive type 2 diabetic patients. 758 patients were allocated to a "tight" control group aimed to keep blood pressure < 150/85 mm Hg, and 390 patients to a "less tight" control group targeting blood pressure < 180/105 mm Hg. Captopril, an Angiotensin Converting Enzyme (ACE) inhibitor or atenolol, a selective β-adrenergic blocking agent was the anti-hypertensive medications used in this study. 400 patients were given 50 mg twice daily of captopril with a starting dose of 25 mg twice daily, and 358 patients were treated with a daily dose of 50 mg atenolol, which was increased to 100 mg as necessary. If blood pressure goals were not met in either medication group, the other agent was added to the regimen.

During the median follow-up period of 8.4 years, mean blood pressure in the "tight" blood pressure group was 144/82 mm Hg compared with 154/87 mm Hg in the "less tight" control group. The "tight" control group had a 24% reduction in diabetes-related endpoints; 32% reduction in deaths due to diabetes, 44% fewer strokes, and 37% fewer microvascular endpoints, primarily the number of retinal photocoagulation and the development of diabetic maculopathy, which is the main cause of visual impairment in type 2 diabetes. This finding from the UKPDS is the first known report in type 2 diabetes which demonstrate that interventions offering "tight" blood pressure control reduces the risk of diabetic complications.

The results of blood pressure treatment with captopril or atenolol failed to show specific advantages or disadvantages in preventing the complications of type 2 diabetes. There was a 37% progression rate for retinopathy in each group compared to a rate of 51% in the "less tight" control group, and differences were not observed between the captopril and atenolol groups for deterioration of visual acuity. The progression rate of albuminuria and proteinuria and the occurrence of two-fold increase in plasma creatinine concentration and end stage renal disease were similar between these two medication groups. After the first four years of treatment, more patients in the atenolol group discontinued medication, because of impaired peripheral circulation or bronchospasm. Four percent of patients in the captopril group discontinued treatment because of side effects with coughing, and the ACE inhibitor were withdrawn in five patients due to increasing creatinine levels. There was no differences found in the incidence of myocardial infarction, strokes, heart failure, or angina between the two medication groups.

Implications for Patient Care

The UKPDS is a landmark study of type 2 diabetic patients producing very useful data that is translatable to clinical practice. This study has shown that "tight control" of blood glucose levels in type 2 diabetic patients will dramatically reduce the incidence of microvascular complications. Many prospective studies have suggested that hyperinsulinemia is a risk factor for cardiovascular disease in people without diabetes, although these studies do not distinguish between insulin and insulin resistance as the factor associated with increased cardiovascular risk. The University Group Diabetes Program (UGDP), a similarly large prospective study (1,027 patients enrolled) was conducted during a period between 1960- 1966 to evaluate the efficacy of glycemic control in type 2 diabetes in the prevention of cardiovascular complication.[13] The result of the UGDP study was highly controversial because it failed to demonstrate any benefit from oral hypoglycemic agent and insulin therapies. Moreover, the data from UGDP study showed a significantly higher cardiovascular mortality rate in the tolbutamide-treated group than in the placebo-treated group. Over the years, this unexpected finding has elicited many hypotheses that could explain the tolbutamide effect. The mechanism of sulfonylurea toxicity includes myocardial damage from inhibition of ATP-K+ channel opening in the presence of myocardial ischemia due to sulfonylurea binding to the cardiovascular SUR2 receptor, an event that could also increase the likelihood of ventricular arrhythmia.[14] The UKPDS did not demonstrate specific adverse cardiovascular effects with chlorpropamide, glibenclamide, or insulin treatment. Thus, the UKPDS appears to clearly dispel the notion of cardiovascular disease toxicity with sulfonylurea or insulin therapy.

The most striking and unexpected finding from the UKPDS is the results from obese type 2 diabetic patients. Metformin treatment

reduced diabetes-related endpoints, diabetes-related death, and all-cause mortality when compared with conventional treatment. Given the same HbA1C levels obtained the effect of metformin in reducing the risk for diabetes-related complication and all-cause mortality is difficult to explain on the basis of glycemic control. The improvements in cardiovascular disease outcomes might be due to anti-atherogenic effects with metformin, which includes improved fibrinolysis, decreased platelet aggregation, increased erythrocyte deformability, and decreased lipid incorporation into vessel walls which might explain the decreased arterial wall smooth muscle cell growth, and restoration of arterial vasodilatation. The investigators of the UKPDS "boldly" concluded that metformin might be considered first-line treatment in overweight type 2 diabetic patient. The results of metformin treatment suggest that thiazolidinediones (a new class of anti-hyperglycemic agents), which also enhances insulin sensitivity, could produce similar results.[15] The use of metformin in combination with a sulfonylurea has shown an increase in risk of diabetes-related and all-cause mortality. This contradictory and controversial finding may be a consequence of the analytical strategy and have raised new questions for the next generation of clinical trials.[16] The contradiction in the results is the finding of increased mortality with combined used despite clearly reduced morbidity and mortality when used separately. The controversial consideration is the fact that many physicians are now using this combination for patients with diabetes who failed to reach targeted goals with one agent. American Diabetes Association believes this analytical approach does not resolve the discrepancy in the results with metformin, that is, it does not provide assurance that the combination is safe or prove that it is unsafe. If there is some specific mechanism of adverse interaction between metformin and sulfonylurea drugs, this can only be definitely determined in a new, appropriately designed, randomized, placebo-controlled trial. Until such a trial is concluded, American Diabetes Association does not recommend any change in the current guidelines for the use of metformin as monotherapy or in combination with sulfonylurea drugs.[17]

In addition to adequate control of blood glucose levels, aggressive control of blood pressure has shown positive effect in all diabetes-related complications. Hypertension is one of the risk factors for cardiovascular and renal disease and commonly associated with type 2 diabetes. At the age of 45 years, approximately 40% of patients with type 2 diabetes are hypertensive and this proportion rises to an estimated 60% prevalence by age 75 years. The negative inotropic effect of atenolol might have been expected to increase the incidence of heart failure, but the protection against heart failure was the same for atenolol as for captopril. The similar effect of captopril and atenolol on clinical endpoints suggests either that both β-adrenergic blockers and ACE inhibitor have specific beneficial effects or that the decrease in blood pressure is the important factor and not the type of treatment. These results are interesting given the current debate over benefit from ACE inhibitor treatment for preventing the progression of diabetic nephropathy. The suggestion that ACE inhibitors have a specific renal protective effect in the treatment of type 2 diabetes is not supported in this study. These results clearly demonstrate the renal protective effect of reducing blood pressure, which decrease capillary perfusion, transcapillary leakage of albumin, and decrease damage to glomeruli. This study shows that atenolol and captopril are equally effective and safe in lowering blood pressure and reducing the risk of complications in type 2 diabetic patients. In the UKPDS, lipid levels were not included in the data analysis and may prove to be a contributing factor to some of the results presented.

In summary, how do we translate the UKPDS results? The American Diabetes Association believes that the evidence confirms what many investigators have suspected all along that people with type 2 diabetes and their health care teams should strive diligently to lower blood glucose levels as close to normal as possible. Thus, intensive therapy of type 2 diabetes with sulfonylureas and insulin is beneficial despite the associated weight gain, and not a detriment to reducing cardiovascular outcomes. The UKPDS data supports the use of metformin as a starting agent in overweight patients as monotherapy and perhaps could be extended to other insulin sensitizers, the thiazolidinedione.

The importance of controlling cardiovascular disease risk factors in diabetic patients cannot be over emphasized, especially blood pressure control as reported in the UKPDS. Still, the finding of equal efficacy between captopril and atenolol does not fully support the abandonment of ACE inhibitors for cheaper, generic β-adrenergic blockers in treating hypertension among diabetics. Along with the potential renal protective effect of ACE inhibitors, these agents minimally affect plasma lipid levels, enhances myocardial contractility in CHF that is commonly seen in diabetes, and does not induce bronchospasm. American Diabetes Association concluded that both drugs used to reduce hypertension are equally effective and safe, and either can be used with great benefit to treat uncomplicated hypertension in patients with type 2 diabetes. Both conventionally and intensively treated patients in the blood glucose study equally benefited from blood pressure lowering. Likewise, the tightly and less tightly controlled blood pressure study patients had equal benefit from blood glucose lowering. Thus, both hyperglycemia and hypertension should be vigorously treated when they occur together with an expectation that reductions in microvascular and cardiovascular outcomes will be additive [17]. Lastly, other cardiovascular disease risk factor analysis (e.g. dyslipidemia, cigarette smoking, nutrition and exercise modification) should also be emphasized since the clinical management of type 2 diabetes requires a multimodal and comprehensive approach.

What is clear from the UKPDS is that hyperglycemia treatment impacts microvascular and macrovascular outcomes in patients with diabetes, even with less than a one percent reduction in HbA1c levels. The UKPDS findings more clearly demonstrate the importance of addressing the other CVD risk factors in type 2 diabetes mellitus to reduce secondary complications. The results from the UKPDS define the management of type 2 diabetes mellitus as a complex disorder, engaging the physician to examine more of the patient than hyperglycemia.

References

1. Beddow R, Arakaki R. Non-Insulin Dependent Diabetes Mellitus: an Epidemic Among Hawaiians. *Hawaii Med J* 1997;56:14,16-17.
2. DCCT Research Group. The effect of intensive diabetes treatment on the development and progression of long-term complications in insulin-dependent diabetes mellitus: The Diabetes Control and Complications Trial. *N Engl J Med* 1993;329:978-86.
3. Reichard P, Nilsson BY, Rosenqvist U. The effect of long term intensified insulin treatment on the development of microvascular complications of diabetes mellitus. *N Engl J Med* 1993;329:304-309.

(Continues on p. 313)



FOR ALLAN LUM, RETIREMENT PLANNING IS JUST PAR FOR THE COURSE.

As General Manager of the Waialae Country Club, Allan Lum knew that a 401(k) plan would attract and retain quality employees. But he was surprised to find that a Retire E-Z 401(k) plan could do even more. That's because the Retire E-Z 401(k) plan from First Hawaiian Bank not only provides all the pre-tax benefits and investment options of an ordinary 401(k), but the added benefit of direct communication and on-going education from our team of financial planning experts. So Club employees aren't just saving money, they're confident that they're investing in a plan specifically tailored to their needs. And a confident employee is a happy employee. Which makes Allan and the members of Waialae Country Club happy as well. So everybody's happy. Simple.

To find out more about the benefits of a Retire E-Z 401(k), call 525-7134 on Oahu, 329-7042 in Kona, 873-2240 on Maui, or 933-2241 in Hilo.

Bank Online
www.fhb.com

NOT FDIC INSURED • NO BANK GUARANTEE • MAY LOSE VALUE

First Hawaiian Bank

THE power OF yes.

The Cell Cycle

Niten Singh MD, CPT, MC, Robert B. Lim MD, CPT, MC, and Michael A.J. Sawyer MD, LTC, MC

Introduction

The sustenance of life and growth and the perpetuation of species require organisms to renew and reproduce cells. Conversely, uncontrolled cell division manifests as neoplasia, and can lead to the demise of the organism. At the cellular level, cycles of duplication and equal separation of cellular contents, followed by cell division, accomplish reproduction. These processes are directed by elaborate cell cycle control systems in most species. All forms of life, from single-celled, prokaryotic organisms, such as bacteria, to the most complex, multicellular eukaryotic species are propagated in this manner.

Our understanding of the cell cycle was formerly limited to visual information derived from those structures and events that could be characterized by microscopy. This consisted mainly of the observation of chromatin condensation, the gross description of chromosomal structure, and monitoring of the events that occur on the mitotic apparatus during actual cell division.

Comprehension of the cell cycle has been greatly improved upon in recent years due to advances in molecular biological knowledge and techniques. This has included the elucidation of an intricate system of specific regulatory proteins, which direct and control the cell in its passage through the phases of the cell cycle. Additionally, a system of critical checkpoints in the cell cycle has been described. These checkpoints must be negotiated and passed to allow the cell to successfully continue through the cell cycle, and on to the ultimate goal, which is cell division.

Much of the work leading to the discovery and clarification of these processes was completed in simple, eukaryotic organisms, like budding or fission yeast. Extrapolation of the cell cycle events that occur in yeast to a more complex eukaryotic organism, such as a human, is thought to be valid. This is because the protein-based machinery of the eukaryotic cell cycle control system has been extremely well conserved over many eons of evolution. This is proven in the rescue of mutant yeast cells, which lack one or more protein components of the cell cycle control system. The function of the cell cycle control system can be reestablished in these yeast following transfection with human cell cycle control proteins.

In this review, we discuss the mechanisms and events that comprise the cell cycle. The review will focus on events that occur during the cell cycle in vertebrates. We will analyze the progress and results of normal cell division, and will briefly examine the derangements in cell cycle control that may allow abnormal and potentially malignant cells to continue to divide.

Correspondence to:
Michael A.J. Sawyer MD, LTC, MC
Department of Surgery
1 Jarrett White Road
Tripler Army Medical Center
Honolulu, Hawaii 96859-5000

Historical Background

The first description of a compound light microscope is credited to Johannes Kepler, circa 1611. Using a compound light microscope in 1655, Joseph Hooke studied cork sections and noted fine fenestrations that he termed "cells." Shortly thereafter, in 1674, the great Dutch amateur scientist Anton van Leeuwenhoek provided the initial microscopic descriptions and drawings of bacteria, yeast, and protozoa. Leeuwenhoek ground his own lenses and mounted them on hand held microscopes of his own design to study these "animalcules." Brown discovered the cell nucleus in 1833, while performing light microscopy on orchids.[1]

A tremendous advance in cell biology occurred in 1838 when Schleiden and Schwann proposed the cell theory. This theory stated that nucleated cells are the basic compositional unit of plant and animal tissues. Several years later, in 1857 Kolliker observed mitochondria in skeletal muscle, and thus became the first investigator to describe an organelle. In 1879, Fleming provided detailed descriptions of chromosomal activity during mitosis.[2]

A century and a score of years have passed since Fleming's discovery. In that time, the fields of cell and molecular biology have grown exponentially. Myriads of advances in light and electron microscopy have occurred. These advances have been accompanied by numerous landmark achievements in tissue culturing, ultracentrifugation, X-ray crystallography, protein electrophoresis, monoclonal antibody technologies, and enzymology. Each of these specialized disciplines has been instrumental in the elucidation of the complex events of the cell cycle.

One of the initial events in the discovery of the cell cycle occurred in 1951 when Howard and Pelc used ^{32}P to label the roots of the *Vicia faba* seedlings. They noted the period between mitosis and DNA synthesis was relatively prolonged, compared to the period between DNA synthesis and mitosis.[3] This work led to the concept of the four phases of the cell cycle. In 1962 Cohen purified the first known growth factor, epidermal growth factor (EGF).[4] Growth factors subsequently proved to be the substances responsible for providing the impetus for mammalian cells to enter and complete the cell cycle. These were the founding descriptive events of the cell cycle and these discoveries formed the foundation for all future cell cycle research. Although much progress has been made, the cell cycle is far from being completely described.

An Overview of the Cell Cycle

In its entirety, the cell cycle appears as a continuum of events that lead up to and culminate in cell division. However, the rates at which

the steps comprising the cell cycle are completed are not uniform. The time it takes for a cell to complete an entire cell cycle and divide varies considerably from species to species, and even from cell type to cell type within the same organism. Variation in the length of the cell cycle also depends on the stage of development of the organism (e.g. fetus vs. adult).

If we dissect the cell cycle into distinct steps, we can see that each step, or **phase**, focuses on specific goals to help prepare the cell for reproduction.[5] Again, time is not divided evenly between the steps of the cell cycle. Thus, some phases are completed much more rapidly than others. This will be discussed in detail below. Some other influences on the speed of the cell cycle include the age of the cell, the age of the organism as a whole, and various signals from the extracellular environment.

The cell cycle of a eukaryotic organism can be divided into four phases. These phases include **mitosis (M phase)**, the **G1 phase**, the phase of **DNA synthesis (S phase)** and the **G2 phase**. During mitosis, the cell divides into two equal daughter cells. The events comprising mitosis may be subdivided further into six separate stages, including **prophase**, **prometaphase**, **metaphase**, **anaphase**, **telophase**, and **cytokinesis**.[6]

The G1, S, and G2 phases of the cell cycle can be grouped into a single period termed **interphase**. During interphase the cell is continuously growing, as long as it continues to progress through the cell cycle toward mitosis. The G1 phase is defined by the **gap** in time between the completion of cell division, and the beginning of DNA synthesis. A cell is in S phase while it is **synthesizing new DNA** in preparation for cell division. The G2 phase is defined by the **gap** in time between the completion of DNA replication and mitosis.

Although the G1 and G2 phases were originally named for the apparent gaps in time between the significant and microscopically observable cellular events that revolve around chromatin condensation and mitosis during S phase and M phase, it is now known that these phases are characterized by intense activity. During the G1 and G2 phases in actively cycling cells, the cell is continuously monitoring its **surrounding environment** and its own **growth**, **RNA synthesis**, and **protein synthesis**. The cell also analyzes the process of **DNA replication** for completion and precision. As the cell nears completion of the G1 and G2 phases, it must pass important **checkpoints**.[7] The cell pauses at these checkpoints to make a definitive analysis of the factors mentioned above. If all is satisfactory, the cell cycle control system propels the cell forward in the cycle, and it is allowed to progress to the S phase or M phase, respectively.

In contrast, cells may enter a special "**resting**" phase called **G0**. Cells in G0 are not actively passing through the cell cycle. In simple eukaryotes, like yeast, this is often due primarily to lack of nutrients, or a particularly hostile extracellular environment. Under optimal conditions, these primitive cells will pass continuously through the cell cycle and divide. In advanced, multicellular organisms, lack of nutrients at the cellular level is not a common problem. Yet, at least in mature adults, most differentiated cell types rarely divide. These cells require specific stimuli to prompt them to re-enter the cell cycle and divide again. Therefore, the rate-limiting factor for cell division in these instances is the presence of a stimulus, such as one or more **growth factors** in sufficient concentrations, which are **specific to the cell type**.

Cells decide to enter G0, or to progress through completion of the cell cycle, near the checkpoint which heralds the end of the G1 phase. Thus, it is the **duration of the G1 phase** that accounts for the great majority of the **variability of time** which different cell types require **to complete the cell cycle.** In slowly dividing cells, the G1 phase may last months to years. Cells that no longer divide remain arrested in the G1 phase.

Before an adequate understanding of the events that occur during each of the phases of the cell cycle is possible, we must acquire insight into the complex control system that regulates a cell's passage through the cell cycle. The following sections will elaborate on the cell cycle control system. We will concentrate on the events that occur in the period between mitoses known as interphase. Mitosis will be discussed in its own section to follow.

Interphase

The Cell Cycle Control System

The cell cycle control system consists of distinct sets of proteins and protein kinases, which are enzymes that phosphorylate proteins to active or inactive forms. Both function specifically to guide the progression of the cell through the cell cycle with control as their explicit function. They do not actively participate in the synthesis of cellular protein or genetic material. These proteins and protein kinases are the primary regulators that determine whether or not a cell passes through the major checkpoints which are found at the end of the G1 and G2 phases, and during metaphase. Passage through these checkpoints is required for the cell to continue through the phases of DNA replication (S phase), and cell division (M phase).

The components of the cell cycle control system are influenced by the **intracellular milieu** and various **environmental factors** through **feedback signals**. These feedback signals relay information on the status of protein or DNA synthesis, cell size, and the environmental conditions with respect to cell division. Abnormal or delayed protein or DNA synthesis, insufficient cell growth, or unfavorable environmental conditions will delay or halt the progress of the cell cycle control system. The control system in turn delays or halts the progress of the cell through the cell cycle. In this fashion, cellular and environmental factors provide important feedback information, and directly influence the control of the cell cycle at the G1 and G2 checkpoints.[8] The checkpoint that occurs at metaphase in concerned primarily with the alignment of chromosomes on the mitotic spindle. Overall, the feedback and checkpoint systems help to prevent lethal or mutagenic cellular catastrophes like entry into mitosis before completion of DNA synthesis, or initiation of anaphase before the chromosomes are aligned properly on the mitotic spindle.

For example, the protein product of the **p53** gene is instrumental in halting the cell cycle in cells with abnormal or damaged DNA before they enter S phase.[9] In cells with damaged DNA, p53 **accumulates during G1**, and brakes the cell cycle in the G1 phase. Many human malignancies have been associated with mutations in the p53 gene.[10] **Loss of function** of the p53 gene results in loss of feedback control, and allows cells with abnormal DNA to pass the G1 checkpoint, and progress through the cell cycle.

As mentioned above, two major classes of proteins comprise the machinery of the cell cycle control system. The **cyclin-dependent protein kinases (Cdks)** influence the progression of the cell cycle by phosphorylating serine and threonine moieties on select proteins

that control the synthesis of cellular elements necessary for reproduction.[11] In yeast cells, a single type of Cdk protein is responsible for cell cycle control. In mammalian systems, there appear to be separate Cdk proteins that are specific for the G1 and G2 checkpoints. [12]

The Cdks are complemented by a group of proteins called **cyclins**.[13,14] Cyclins are synthesized and degraded as the cell goes through the cell cycle. After they are synthesized, the **cyclins bind to Cdk protein molecules** promoting the phosphorylation of target proteins by Cdk. Subsequently, the cyclins are degraded. The Cdk proteins are released, and Cdk phosphorylation of its target proteins is decreased or stopped. Distinct classes of cyclins are synthesized during the G1 and G2 phases.[15] Each subset of cyclins is synthesized and degraded once during the cell cycle, and is designed to work during a specific phase in the cell cycle. [16]

The first class of cyclins to be synthesized following mitosis is the **G1 cyclins**. As might be expected, the G1 cyclins bind Cdk protein molecules during the G1 phase.[17] Formation of this **G1 cyclin-Cdk complex** is necessary for the cell to pass the G1 checkpoint. Once it has passed the G1 checkpoint, the cell enters S phase, and begins a new round of DNA replication.

During the G2 phase, a second class of cyclins, known as **mitotic cyclins**, accumulate and bind Cdk protein molecules.[18,19] This event is extremely important and results in the formation of what is called the **M phase promoting factor, (MPF).** This factor itself is rather inert, however, other enzymes act to phosphorylate and dephosphorylate the complex, resulting in its activation. Just prior to entering mitosis, cells experience an exponential increase in the concentration of activated MPF. This is thought to be due to a **positive feedback** mechanism in which activated MPF stimulates increased activity of the enzyme or enzymes activating it. In short, activated MPF concentrations build rapidly, and at an accelerating pace until some "critical mass" is reached. The result is that the cell is catapulted into the series of events known as mitosis. Somewhere at the junction between metaphase and anaphase, activated MPF is rapidly inactivated. This is triggered by the degradation of mitotic cyclins. The cell then completes and exits mitosis, and returns to the G1 phase.

Control of the Vertebrate Cell Cycle

Progression through the cell cycle and reproduction are constitutive features of single-celled organisms, and are influenced mainly by the availability of nutrients. Unless nutrients are unavailable, these primitive organisms are continuously advancing through the cell cycle, dividing, and cycling again. This method assures survival of these species, which are in constant competition against other microorganisms for nutrient resources, and favorable environmental conditions.

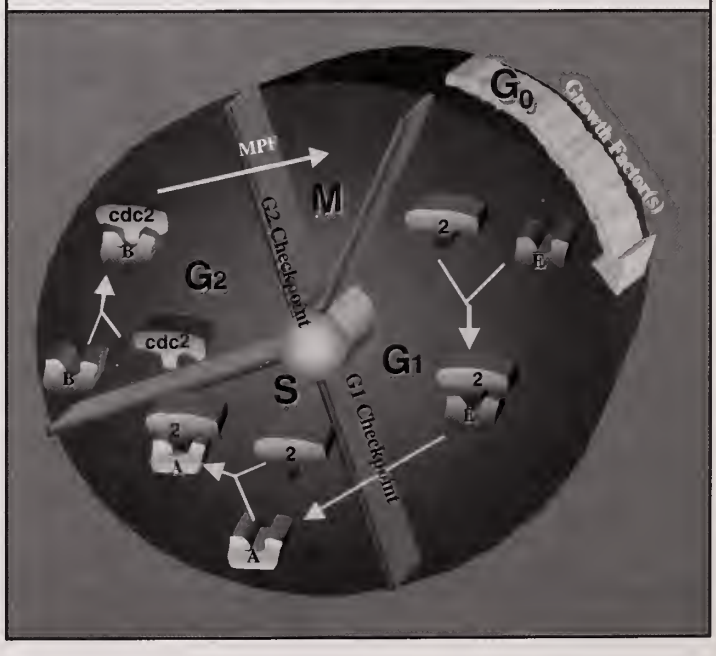
For more advanced, multicellular organisms, such as vertebrates, complex signals are required to induce cells to enter the cell cycle and divide. Particularly in adults, most differentiated cells are committed to performing their specialized functions, and are not actively progressing through the cell cycle. There are many different types of signals that may induce a vertebrate cell to divide. Among the most important are the proteins called **growth factors**. Growth factors will be discussed further below, and in detail in another article in this Molecular Biology Review Series. For now, suffice it to say that growth factors can generate signals that are transduced into the cell, and can override a cell's inherent tendency to remain in the resting (G0) state. Susceptible cells are induced to enter the cell cycle again and divide.

The structure of the cell cycle control system in vertebrates is fundamentally the same as that in their eukaryotic relatives, the yeasts. However, in vertebrates, the proteins are more numerous, and their functions more phase-specific. Yeasts go through the cell cycle under the control of a single type of Cdk molecule, and two known cyclins. In the vertebrate cell cycle control system, at least **eight cyclins** (**A, B, C, D, E, F, G, and H**), and **eight cyclin-dependent kinases** (**cdc2** and **CDK 2,3,4,5,6,7 and 8**) have been identified.[20]

The activation of cyclin-dependent kinases depends on their binding with one or more types of cyclin protein molecules. In the vertebrate cell cycle, passage of the **G1 checkpoint** requires the binding of **CDK2 protein** with **cyclin E**. Activation of **DNA synthesis** requires **CDK2 protein** binding with **cyclin A.** Entry into **M phase** requires **cdc2** to be complexed with **cyclin B**. The **rate-limiting step** appears to be the **synthesis of the appropriate cyclin**.[21] CDK protein molecule concentrations remain relatively stable in cycling cells, while the concentrations of the various cyclins increase in proximity to the cell cycle phase during which they function, and decline thereafter. (Figure 1.)

Additional control of the cell cycle is achieved via the **CDK inhibitors (CDI)**. Two families have been described. The first is the universal CDI that inhibits all of the G1 kinases (CDK2,3,4,6) and is composed of **p21, p27,** and **p57**. The other family known as the **INK4** family is restricted to inhibition of CDK 4 and 6 and is made up of **p15, p16, p18,** and **p19.**[22]

Figure 1.— Simplified Cell Cycle: Phases, Cyclins, Cdks, Checkpoints



The Checkpoints

The major checkpoints in the cell cycle occur at the transition from G1 to S phase, and at the transition from G2 to M phase.[23] (Figure 1.) There is also a checkpoint that is found at the transition from metaphase to anaphase, and allows the cell to complete mitosis.

A characteristic common to both yeast and mammalian cells is that they must grow before they can divide. The cytoplasmic volume, and the requisite complement of proteins, and other necessary molecules must be doubled, along with the cell's genetic information, before the cell can divide into two equal daughter cells. This process of cell growth is an extremely important and time-consuming component of the cell cycle. In fact, the time taken to complete adequate cell growth is greater than the total time for both DNA synthesis during S phase and mitosis. The **size checkpoints** at the ends of the G1 and G2 phases are designed to allow the cell to inspect for adequate growth and synthesis of cellular materials. If the cell has grown sufficiently, the control system allows it to proceed through the G1 checkpoint to S phase, or subsequently, through the G2 checkpoint to mitosis. If the cell has not attained adequate size, or if environmental conditions mitigate against cell division, the cell cycle control system halts the cell's progress toward division at the G1 or G2 checkpoint.

In the majority of eukaryotic organisms, the **most important checkpoint** is the **G1** checkpoint. In yeast cells, this is known as the **Start** checkpoint.[24] In budding yeast cells, as well as most multicellular eukaryotes, passage of the Start checkpoint commits the cell to completion of the cell cycle. This is true even if subsequent environmental or growth circumstances are unfavorable for cell growth and division. Thus, passing Start is equivalent to going beyond the "point of no return." As described above, combinations of appropriate cyclins and Cdks in adequate concentrations are necessary to enable passage of a checkpoint.

The binding of specific cyclins to specific Cdks at each of the major checkpoints results in the formation of important protein kinases. At the **Start (G1) checkpoint**, the protein kinase is called **Start kinase**.[25] At the **G2 checkpoint**, the protein kinase product is the **MPF**. Each of these kinases phosphorylates target proteins that are necessary to take the cell through S phase and M phase, respectively. MPF must be activated by other protein kinases before it can influence the cell to enter mitosis.[26]

The Influence of Growth Factors

Early attempts at mammalian cell cultures failed unless the cells were supplied with serum. This is because mammalian cells will grow and divide only if supplied with **growth factors**, which are present in the serum. This observation eventually led to the isolation of about fifty growth factors. Most growth factors are protein molecules. Other molecules, such as steroid hormones, may function as growth factors as well. [27]

One of the first growth factors to be isolated was **platelet-derived growth factor** (PDGF).[28] PDGF is produced by platelets and stored in specific granules which are released in response to specific stimuli. One of the primary stimuli for platelet granule release is participation in the hemostatic process. Active hemostasis is typically found in areas of tissue damage or trauma, and release of PDGF is thought to play an important role in the initiation of the subsequent healing process. Among its many functions in this regard are the induction of fibroblast migration and proliferation.[29]

In regard to the cell cycle, some growth factors influence the rate of protein synthesis, and cell growth. Other growth factors function to aid in ushering cells through the G1 checkpoint without specifically regulating protein synthesis and cell growth.

Growth factors normally circulate in very small concentrations, on the order of nanomoles or picomoles. This makes their isolation very difficult. However, most growth factors are thought to function in a paracrine fashion, being produced and acting locally where needed.

In order to mediate their effects, growth factors must bind to growth factor receptors on the surface of cells. The type of growth factor receptors that a cell possesses will dictate the growth factors to which it is sensitive. Some growth factors like PDGF and **epidermal growth factor** (EGF) are broad-spectrum growth factors.[30] This means that many cell types, including smooth muscle, neuroglia, and fibroblasts express receptors for PDGF. Many types of epithelial and even nonepithelial cells have receptors for EGF. In contrast, some growth factors are very specific. For example, **erythropoietin** receptors are found only on red blood cell precursors. Finally, the growth and proliferation of most cells depends on the influence of multiple growth factors. Therefore, cells will usually express receptors for many different types of growth factors.[31]

When growth factors bind to their transmembrane receptors, the cytosolic portion of the receptor activates various protein kinases that induces a signal transduction process which eventually sends messages to the nucleus. Within the nucleus, alterations in gene expression occur. Specifically, expression of two classes of genes is induced.

The first class is the **early response genes**, whose induction occurs within 15 minutes of growth factor-receptor binding. Synthesis of new proteins is not required to induce expression of this class of genes. However, when activated, these genes direct the synthesis of several proteins. Activation of the early response gene ***myc***, results in production of the protein **Myc**.[32] This protein is crucial, as its synthesis is important in transcription of the **delayed response genes**.

Expression of the delayed response genes occurs more than one hour after growth factor-receptor binding, and does require previous synthesis of new regulatory proteins, like Myc. In turn, the protein products that results from delayed response gene expression include the cell cycle control proteins, the cyclins and Cdks.

Growth Factors, Serum Deprivation, and the Cell Cycle Control System

If cells in culture media are deprived of serum at the right point in time, their ability to progress through the cell cycle is greatly impaired. Even short periods of serum deprivation, like one hour, will result in long delays in completion of the cell cycle.

This effect depends on the time when serum deprivation occurs. If fibroblasts are deprived of serum less than 3.5 hours after completing mitosis, they will take an extra eight hours to complete the next cell cycle. If serum deprivation occurs beyond 3.5 hours, the cells will continue through the cell cycle unabated. These observations places the G1 checkpoint somewhere around the 3.5 hour mark after mitosis in these actively cycling cells.

Serum deprivation results in depressed rates of protein synthesis and cell growth. Among the proteins whose synthesis is impacted are the proteins comprising the cell cycle control system. When serum deprivation occurs, cyclins and Cdks are rapidly broken down. After reintroduction of serum, synthesis of new cyclins and Cdks in concentrations sufficient to drive the cell through G1 requires a significant amount of time. This is because the pathway described in the section above must be re-entered. Growth factors must bind their receptors and start the kinase pathway that results in the growth factor message reaching the nucleus. Early response genes can then be transcribed and direct the synthesis of proteins such as Myc. Next, the delayed response genes are transcribed and begin to orchestrate the synthesis of the cell cycle control proteins. These account for the increased time required by these cells to complete the cell cycle.

Protooncogenes, Oncogenes and Tumor Suppressor Genes

Protooncogenes promote the growth of the cell, the synthesis of cell cycle control proteins, and guide the cell past the G1 checkpoint. An example of a protooncogene is *myc*. Properly functioning protooncogenes direct the growth and proliferation of cells when appropriate signals, like growth factors are present. Mutated protooncogenes are called **oncogenes**. Oncogenes can induce cellular proliferation beyond the normal constraints of cell control, a primary feature of neoplasia.[33]

Tumor suppressor genes are the antithesis of protooncogenes. They inhibit cell proliferation, mainly by braking the cell cycle control system. Mutations in tumor suppressor genes can also result in neoplasia.[34]

One of the earliest tumor suppressor genes to be identified was the **retinoblastoma gene**, which is responsible for directing the synthesis of the **retinoblastoma protein** (Rb). When it is dephosphorylated, the Rb protein binds regulatory proteins that promote cell proliferation and inhibits them. Phosphorylation of Rb releases these regulatory proteins, and allows them to carry out their functions.

In cells that are in G0, Rb is mainly dephosphorylated. In this state, Rb impairs the transcription of protooncogenes like myc, ***jun***, and ***fos***.[35] Therefore, it brakes the cell cycle and holds cell proliferation in check. Dephosphorylated Rb may also function as part of the braking mechanism that makes up the G1, or Start, checkpoint.

The introduction of growth factors causes the stimulation of phosphorylase and kinase proteins, which result in the phosphorylation of the Rb protein on serine and threonine residues. The cascade of early and delayed response genes and their protein products is activated, and the machinery of the cell cycle control system, including cyclins and Cdks, is assembled. Cells are then driven past the G1 checkpoint, to DNA synthesis, and mitosis.

Loss of both copies of the retinoblastoma gene can therefore lead to uncontrolled cell cycling and reproduction. Clinically, this is seen as abnormal cell proliferation in the immature retina.

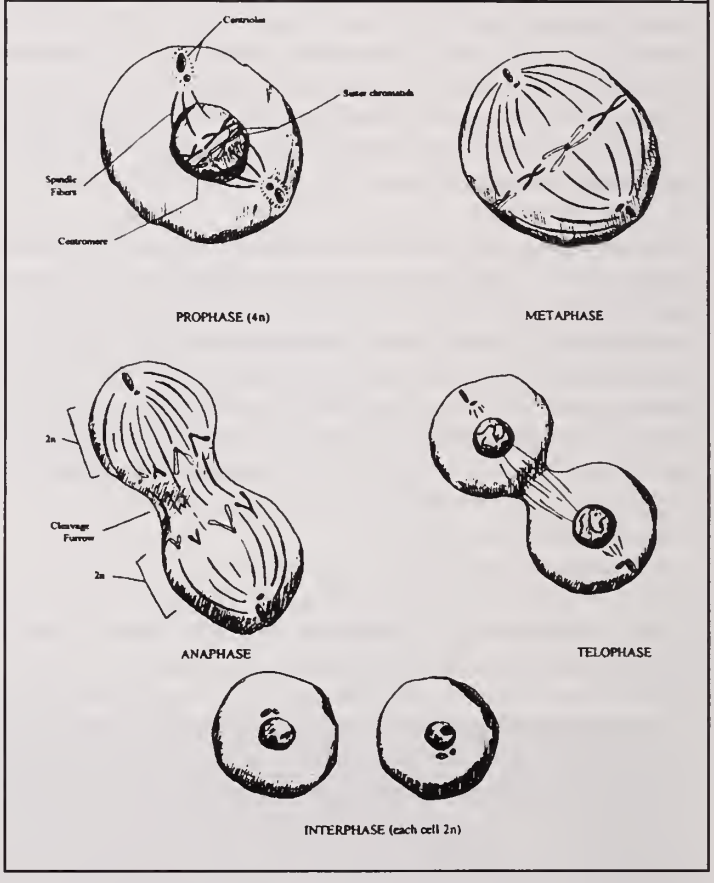
Mitosis

An Overview of Mitosis

The events of interphase are designed to prepare the cell for division. In actively cycling cells, mitosis, or **M phase** is the culmination of the cell cycle. The discussion that follows describes the events of mitosis that occur in eukaryotic cells.

During mitosis, specialized cytoskeletal rearrangements occur which result in the successive formation, utilization, and dissolution of the **mitotic apparatus.** The major elements of the mitotic apparatus are the mitotic spindle and the contractile ring. The net result is that the genetic material, cytoplasm, and its contents, which have been duplicated during interphase, are divided between two daughter cells. Specifically, mitosis is represented by segregation of pairs of chromosomes, and the production of two separate nuclei. The actual division of the parent cell into two separate daughter cells is called **cytokinesis.** (Figure 2.)

Figure 2.— Phases of Mitosis



Key Events in Mitosis

Chromosome condensation heralds the advent of mitosis. This event is associated with the phosphorylation of histone H1 proteins by the enzymatic action of the MPF. This action of the MPF on histone proteins is thought to help direct chromosome condensation.

Next, cytoskeletal microtubules undergo arrangement into a **mitotic spindle**. This spindle helps orient the pairs of chromosomes along an axis that will facilitate distribution of one copy of each chromosome to each daughter cell. As mitosis progresses, the mitotic spindle directs the movements of the daughter chromosomes to opposite spindle poles.[36]

The poles of the mitotic spindle are composed of **centrosomes** and their associated pairs of **centrioles.** The centrosome serves as an

anchor for the microtubular elements of the mitotic spindle. During interphase, the cell synthesizes a centrosome for each daughter cell, but these centrosome copies remain in the proximity of one another in the nucleus, until the onset of mitosis. During mitosis, the nuclear envelope dissolves, and the centrosomes part to migrate in opposite directions. Next, the centrioles begin the task of organizing the microtubules of the mitotic spindle. These microtubules emanate from the centriole pairs in a radial arrangement that is called an aster. The chromosomes migrate along the spindle, and the nuclear envelope reforms. Each daughter cell receives a centrosome and a pair of centrioles with which to begin the next interphase.

Cytoskeletal actin and myosin-2 filaments arrange themselves to form the **contractile ring**. This ring is constructed circumferentially around the cell, just inside the plasma membrane, in a plane that is oriented perpendicular to the mitotic spindle. During mitosis, the contractile ring slowly draws the plasma membrane in the middle of the cell together to form an hourglass-like shape. At the narrowest point, the plasma membrane is pinched together and two daughter cells are created. This is cytokinesis, which is designed to lag slightly behind mitosis.

The Phases of Mitosis

For the purposes of this discussion, we will divide the events into six phases, including: **prophase, prometaphase, metaphase, anaphase, telophase**, and **cytokinesis.**

The most significant event in prophase is the gradual condensation of the dispersed, nebulous nuclear chromatin characteristic of interphase into well-defined, compacted chromosomes. During the preceding S phase, the chromosomes would have undergone replication, and appear during prophase as pairs of sister **chromatids.** Located in each of these chromatids is a DNA sequence known as the **centromere,** which is essential for precise segregation of the sister chromatids. Nucleoli disappear during prophase. The mitotic spindle, composed of cytoskeletal microtubules and their associated proteins, begins to form outside the nucleus near the conclusion of prophase.

Dissolution of the **nuclear envelope** sharply demarcates the transition from prophase to **prometaphase**. After the nuclear envelope dissolves, the developing mitotic spindle comes to occupy its position. Remnants of the nuclear envelope may be seen as membrane vesicles in the vicinity of the mitotic spindle. The centromeres express proteins called **kinetochores,** which attach them to microtubules on the mitotic spindle. The microtubules which have chromatids attached are therefore called **kinetochore microtubules**. The kinetochore microtubules exert tension on the pairs of sister chromatids, which helps them to flagellate, and prepare for segregation. Sister chromatids from each pair attach to kinetochore microtubules originating from the opposite mitotic poles. This ensures that each daughter cell will receive a copy of the chromosome. Those microtubules which are part of the mitotic spindle but do not have chromatids attached are termed **polar microtubules**, and those external to the spindle are known as **astral microtubules**. As prometaphase ends, the kinetochore microtubules are completing the alignments of pairs of chromatids on the mitotic spindle.

In **metaphase**, pairs of sister chromatids are aligned on the mitotic spindle at a point midway between the spindle poles called the **metaphase plate**. The chromatids are attached to the metaphase plate by their kinetochores, and are kept in alignment by the kinetochore microtubules. Control mechanisms ensure proper alignment of the chromatids on the metaphase plate before the cell is allowed to exit metaphase.

Signaled by **MPF inactivation** and **cyclin degradation**, the cell suddenly enters anaphase. The two kinetochores of each chromosome begin migration toward opposite spindle poles, each pulling a sister chromatid along with it. At this point, each chromatid may be properly termed a **daughter chromosome.**

Migration of the daughter chromosomes to the poles of the mitotic spindle heralds the arrival of **telophase.** Other telophase events include dissolution of kinetochore microtubules, elongation of polar microtubules, and **reformation** of a **nuclear envelope** around each set of daughter chromosomes. Finally, the chromatin diffuses and the nucleoli reappear. Mitosis is then concluded.

Division of the cytoplasm, called **cleavage**, is first noticeable during anaphase. This progresses during telophase, under the influence of the contractile ring. The contractile ring squeezes the cytoplasm at the mid-circumference of the cell, creating what is called a **cleavage furrow**. The cell membrane is slowly pinched together at this point, resulting in the formation of two individual daughter cells. These events comprise the process known as **cytokinesis.**

Old Cells: The Effect of Cell Senescence

It is a well-recognized fact that most somatic cell lines derived from mammals or birds possess a limited ability to replicate. That is to say that they will not continue to divide indefinitely, even when meticulously supported in vitro. This is in contrast to normal germ cells, and to cell lines developed from cancer cells, or other cells that have undergone a genetic mutation that makes them **immortal.**

Cells, which are derived from a normal fetus or young organism, will progress through more cell divisions than those taken from an adult organism. Additionally, cells derived from an adult will complete more cell cycles than those harvested from an elderly individual. Once these cells enter G0, they are unable to reenter the cell cycle. The dominant effect aging has on limiting the number of divisions a particular cell can accomplish has led to the term **cell senescence**.

The purpose of cell senescence and the exact mechanisms causing it remain a topic of intense research. Specialized, repetitive DNA sequences termed **telomeres** are found at the end of all chromosomes.[37] A unique enzyme called **telomerase** is responsible for directing the replication of telomeres during cell division. [38] This enzyme is not as precise as those which orchestrate the copying of the rest of the genome. This results in random differences in the number of telomeric repeats found at the end of each chromosomal DNA sequence. As a cell ages, there is a tendency for the telomeric sequences to be shortened. Therefore loss of telomerase is associated with cell senescence. This may be due to a relative deficiency of telomerase in somatic cells.

Clinical Applications: Cancer Chemotherapy

An understanding of the cell cycle and its controlling mechanisms is important from both a scientific standpoint and from a more practical, clinical perspective. Many scenarios in clinical practice involve the processes of the cell cycle, from the healing of a

gastrointestinal anastomosis to the closure of a venous stasis ulcer. Direct use of the principles of the cell cycle in therapy is demonstrated no better than in the delivery of phase-specific cancer chemotherapy.

Many chemotherapeutic agents in clinical use act during a specific phase of the cell cycle, or direct a preponderance of their effects against an element of the cell cycle or its control system. In the sections below, we briefly discuss some chemotherapeutic agents and their phase-specific effects.[39]

G1 and S Phase

The most important events in these phases of the cell cycle include passage of the G1 checkpoint, which will usually commit a cell to complete the cell cycle, and the synthesis of DNA. New strategies aimed at cyclin dependent kinases that are required for the transition of the G1 to S phase are being investigated. Chemotherapeutic agents which cause **DNA alkylation**, like dacarbazine and mechlorethamine, and those which interfere with **DNA synthesis**, like methotrexate and 5-fluorouracil, are active during these phases.

M-Phase

The cell divides during M phase. In the previous sections, we described the numerous alterations in cytoskeletal arrangements, and in the configuration and alignment of chromosomes, that occur during M phase. Drugs, such as, taxol, vincristine, and vinblastine bind **tubulin**, a cytoskeletal protein important in the construction of microtubules. Agents like etopside and doxorubicin inhibit **topoisomerase II**, an enzyme responsible for the "unwinding"of DNA. Recently two agents olomoucine and roscovitine have been shown to inhibit Cdk activity, which as explained earlier has important implications in the passage of a cell through the G2/S and G2/S checkpoints.[40]

Combination chemotherapy has been employed in many malignancies, utilizing arrays of drugs designed to inflict damage during both phases. For example, acute lymphocytic leukemia has been treated with combinations of prednisone, L-asparaginase, and cytosine arabinoside**(G1/S),** along with vincristine, daunorubicin, and etopside **(M phase).**

Recently, new advances in the area of transcription and the roles of transcription termination and antitermination have been investigated. One of the areas studied has been the RNA polymerase subunit and how it is disrupted by DNA termination sequences. This area may offer an understanding on how tumor cells are able to bypass these termination sequences and continue to make the gene product.[41]

Summary

The cell cycle and the cell cycle control system are the engines that drive life. They allow for the processes of cell renewal and the growth of organisms, under controlled conditions. The control system is essential for the monitoring of normal cell growth and replication of genetic material and to ensure that normal, functional daughter cells are produced at completion of each cell cycle.

Although certain clinical applications exist which take advantage of the events of the cell cycle, our understanding of its mechanisms and how to manipulate them is infantile. The next decades will continue to see the effort of many researchers focused upon unlocking the mysteries of the cell cycle and the cell cycle control system.

References

1. Darnell, J et al. The History of Molecular Cell Biology. *In Molecular Cell Biology.* Scientific American Books Distributed by W.H Freeman and Co. New York.1990. pp 1- 5.
2. Alberts, B et al. Molecular Biology of the Cell. Garland Publishing. New York.1994. pp1-44.
3. Howard A,Pelc SR. Nuclear incorporation of P^{32} as demonstrated by autoradiographs. Exper.Cell Res.2:178-187, 1951.
4. Cohen,S. Isolation of a mouse submaxillary gland protein accelerating incisor eruption and eyelid opening in the newborn animal. J.Biol Chem. 237:1666-1562, 1962.
5. Stein et al. The Molecular Basis of Cell Cycle and Growth Control. Wiley-Liss. New York. 1999, pp. 1-14.
6. Schwesinger,W. and Moyer, M. Cell Biology. In *The Physiologic Basis of Surgery.* Ed. O Leary, J.P. Williams and Wilkins. Baltimore. 1996, pp.1-42.
7. Elledge, S.J. Cell Cycle Checkpoints: Preventing an identity Crisis. *Science.* 274: 1664-1672, 1996.
8. Stillman,B Science. Cell Cycle Control of DNA Replication. *Science.* 274: 1659-1664, 1996.
9. Wiman, K. Minireview: p53: Emergency Brake and Target for Cancer Therapy. *Exp. Cell Res.* 237: 14-18, 1997.
10. Harris, C.C. p53: At the crossroads of molecular carcinogenesis and risk assessment. *Science.* 262: 1980-1981. 1993.
11. Dutta, A. and Bell,S. Initiation of DNA Replication in Eukaryotic Cells. *Annu. Rev. Cell Dev. Biol.* 13: 293-332, 1997.
12. Sherr, C.J. MammalianG1 cyclins. *Cell.* 73: 1059-1065. 1993
13. Fang, F., Newport, J.W. Distinct roles of cdk2 and cdc2 in RP-A phosphorylation during the cell cycle. *J. Cell Sci.* 106:983-994. 1993.
14. Krude, T. et. al. Cyclin/Cdk-dependent initiation of DNA replication in a human cell free system. *Cell.* 99:109-119. 1997.
15. Horne, M.C. et. al. CyclinG1 and cyclin G2 compromise a new family of cyclins with contrasting tissue-specific and cell cycle regulated expression. *J. Biol. Chem.* 271:6050-6061. 1996.
16. Edgar, B. and Lehner, C. Developmental Control of Cell Cycle Regulators: A Fly s Perspective. *Science.* 274: 1646-1652, 1996.
17. Maclachlan, T.K. et. al. Cyclins, cyclin-dependent kinases and cdk inhibitors: implications in cell cycle control and cancer. *Crit. Rev. Eukaryot. Gene Expr.* 5: 27-56. 1995.
18. Mahbubani, H.M. et. al. Cell cycle regulation of replication licensing system: involvement of a Cdk-dependent inhibitor. *J. Cell Biol.* 136:125-35. 1997.
19. Tayoshima, F et. al. Nuclear export of cyclin B1 and its possible role in the DNA damage induced G2 checkpoint. *EMBO J.* 17(10): 2728-2735.
20. Prosperi, E. et al. Cyclins: relevance of subcellular localization in cell cycle control. *Eur. J. Histochem.* 41:161-168, 1997.
21. Egan, E. and Solomon, M. Cyclin-stimulated binding of Cks proteins to cyclin-dependent kinases. *Mol.Cell. Biol.* 18: 3659-67.
22. Puri,P.L. et al. The Intrinsic Cell Cycle from Yeasts to Mammals. In *The Molecular Basis of Cell Cycle and Growth Control.* Eds. Stein et. al. Wiley-Liss. New York. pp.31-36.
23. Nasmyth, K. Viewpoint: Putting the Cell Cycle in Order. *Science.* 274: 1643-1645, 1996.
24. Elledge, S.J. Cell Cycle Checkpoints: Preventing an identity Crisis. *Science.* 274: 1664-1672, 1996
25. Sherr, C. Cancer Cell Cycles. *Science.* 274: 1672-1676, 1996.
26. Stillman,B Science. Cell Cycle Control of DNA Replication. *Science.* 274: 1659-1664, 1996
27. Cross, M. and Dester, T.M. Growth factors in development, transformation and tumorigenesis. *Cell.* 64: 271-280. 1991.
28. Seppa, H. et. al.. Platlet derived growth factor is chemoattractant for fibroblasts. *J. Cell. Biol.* 92:584-588. 1982.
29. Grotendorst, G.R. et al.. Platlet-derived growth factor is a chemoattractant for fibroblasts. *J. Cell. Physiol.* 112:261-266. 1982.
30. Cohen, S. Epidermal growth factor. *Biosci Rep.* 6:1017-1028. 1986.
31. Bunn, H.F. Erythropoietin. *N. Engl. J. Med.* 324:1339-1344. 1991.
32. Kaczmarek, L. et al. Micro-injected c-MYC as a competence factor. *Science.* 228:1313-1315. 1985.
33. Studzinski, G.P. Oncogenes, growth and the cell cycle: An Overview. *Cell Tissue Kinet.* 22: 405-424. 1989.
34. Marshall, C.J. Tumor suppressor genes. *Cell.* 64: 313-326. 1991.
35. Angel,P. and Karin, M. The role of Jun, Fos, and the AP-2 complex in cell proliferation and transformation. *Biochim Biophys Acta.* 1072: 129-157. 1991.
36. Baserga, Renato. Principles of Molecular Cell Biology of Cancer: The Cell Cycle. *In Cancer: Principles & Practice of Oncology.* Eds Devita,V. et al. J.B. Lippincott Co. Philadelphia. 1993, pp 60-67.
37. Buchkovich, KJ. Telomeres, telomerase, and the cell cycle. *Prog.Cell Cycle Res.* 2:187-195. 1996.
38. Cech,T and Linger, J. Telomerase and the chromosome end replication problem. *CIBA Found.Symp.* 211: 20-28. 1997.
39. Devita, V. Principles of Chemotherapy. *In Cancer: Principles & Practice of Oncology.* Eds Devita,V. et al. J.B. Lippincott Co. Philadelphia. 1993, pp 276-292.
40. Hideaki, Iseki et. al. A novel strategey for inhibiting growth of human pancreatic cancer cells by blocking cyclin-dependent kinase activity. *J. Gastrointest. Surg.* 2: 36-43. 1998.
41. Yarnell,W.S. and Roberts,J.W. Mechanism of Intrinsic Transcription Termination and Antitermination. Science 283: 611-615. 1999.

Mammograms

Not just once, but for a lifetime



The National Cancer Institute has free booklets about breast cancer screening. For answers to your questions about cancer and to order these publications, call NCI's Cancer Information Service at **1-800-4-CANCER** (1-800-422-6237).

Persons with TTY equipment, dial 1-800-332-8615.

Visit NCI's website for patients and the public at **http://rex.nci.nih.gov**

Dexamethasone Use in Adult Meningococcal Meningitis

Lisa Hui, Medical Student IV, MBA and Jinichi Tokeshi MD, Associate Clinical Professor at the University of Hawaii

Abstract

The use of dexamethasone in the management of bacterial meningitis in adults remains controversial. This report illustrates the case of a 27-year-old male with severe meningococcal meningitis and meningococcemia who completely recovered after receiving antibiotics and dexamethasone. In adults with suspected bacterial meningitis, especially in high risk cases, the adjunctive use of dexamethasone may be beneficial.

Case Report

The 27-year-old Indonesian fisherman presented with two days of acute mental status change. He was healthy until he developed an upper respiratory infection five days prior to admission. Three days prior to admission, he had a temperature of 104.8F, occipital headache, and vomiting. Two days prior to admission, he became confused and was unable to recall his own name. His mental status worsened and he had urinary incontinence, and was brought to The Queen's Medical Center.

On exam, his temperature was 101.7F, blood pressure was 98/74, pulse rate was 89/minute, respiratory rate was 16/minute, and oxygen saturation was 98% on room air. He was obtunded. He opened his eyes spontaneously, did not respond to verbal commands, and was able to localize pain stimulus. Neck exam showed marked nuchal rigidity. Muscle tone was normal. Reflexes were diminished. Skin had diffuse petechiae on the trunk, extremities, palms, and soles.

Initial studies showed a hemoglobin of 16.4g/dL and hematocrit of 52.8%, leukocyte count of 9,300/mm^3 with 82% segmented neutrophils, normal bands, 10% lymphocytes, and 7% monocytes, and a platelet count of 58,000/mm^3. Computed tomography scan of the brain without contrast was normal. Lumbar puncture showed an opening pressure of 33cm$H_2$0. Cerebrospinal fluid (CSF) was grossly hazy and xanthochromic. CSF leukocyte count was 12,300/mm^3 with 94% segmented neutrophils and 6% lymphocytes. No red cells or glucose were detected. Protein was 333mg%. CSF Gram's stain showed 1+ gram-negative diplococci. CSF and blood cultures grew *Neisseria meningitidis*, group C.

Correspondence:
Jinichi Tokeshi MD
1451 South King Street, Suite 209
Honolulu, HI 96814
(808)949-6221

In the emergency department, the patient's mental status continued to deteriorate. He was given ceftriaxone 2gm IV empirically. He was admitted to the intensive care unit where he was intubated. Within six hours after receiving of the first dose of ceftriaxone, he was started on dexamethasone 10mg IV q6h for five days. The ceftriaxone was replaced by penicillin G 3.5 million units q4h based on culture and sensitivities for a total antibiotic regimen of ten days.

The patient's fever resolved on hospital day one. On hospital day four, he was able to open his eyes and follow commands. He was extubated and was transferred to the medical floor the next day. He continued to improve, platelet count normalized, and he was discharged from the hospital within three weeks with no sequelae.

Discussion

This case may illustrate the successful adjunctive use of dexamethasone in an adult with severe meningococcal meningitis. On admission, the patient was managed for presumed bacterial meningitis. His prognosis was deemed to be poor based on his deteriorating mental status. Risk factors for death among those with a single episode of community-acquired meningitis include age ≥60 years, obtundation on admission, and seizures within the first 24 hours.[4] The patient's initial studies suggested bacterial meningitis, and he was started on antibiotics and dexamethasone.

During the last 15 years, despite advances in the management of bacterial meningitis, including the introduction of third-generation cephalosporins, there have been no significant reductions in the overall mortality or in the incidence of long-term neurological sequelae following bacterial meningitis.[7] Bacterial meningitis continues to be associated with high morbidity and mortality. In North America, the case fatality rate for bacterial meningitis by pathogen is: *Streptococcus pneumoniae* 19-46%, *N. meningitidis* 3-17%, *Haemophilus influenzae* 3-11%, and *Listeria monocytogenes* 15-40%.[1]

Because evidence from in-vitro studies, experimental animal models, and clinical studies suggest that the host inflammatory response is responsible for much of the serious sequelae of this disease, there is interest in the adjunctive use of antiinflammatory agents in the management of bacterial meningitis. The role for corticosteriods in treating bacterial meningitis may include inhibiting the expression of mRNA for tumor necrosis factor (TNF) and interleukin-1 (IL-1), the production of phospholipid derivatives such as prostaglandins and platelet activating factor, the complement activation, and the activity of the inducible nitric oxide synthetase.[7] Although clinical trials support the use of corticosteriods in children with bacterial meningitis, especially in those with *H.*

influenzae type b,[1,3] there are few data supporting its use in adults.

In 1988, Label *et al* first reported that the use of dexamethasone was associated with protection against hearing loss in childhood *H. influenzae* type b meningitis. It was recommended for routine use in childhood *H. meningitis* in 1994.[5]

Since 1988, there has been only one trial involving the adjunctive use of dexamethasone in adults with bacterial meningitis. In a prospective, randomized trial involving 147 adults (≥13-years old) and 282 children with bacterial meningitis, Girgis *et al* found significant reduction in the case fatality rate and neurological sequelae in patients receiving dexamethasone. The breakdown of the 429 cases were: *N. meningitidis* 267, *S. pneumoniae* 106, and *H. influenzae* 56. Dexamethasone was given at 8 mg IM q12h to patients <12-years old and at 12 mg IM q12h to patients ≥12-years old for three days, starting with first dose of antibiotics. They found a reduction in case fatality rate. Twenty (5 adults and 15 children) of 210 patients died among those who received dexamethasone, compared with 42 (18 adults and 24 children)/219 died among those who did not receive dexamethasone ($p<0.01$). The reduction in case fatality rate was statistically significant only in patients with *S. pneumoniae* meningitis, in which 7/52 patients receiving dexamethasone died compared with 22/54 patients not receiving dexamethasone died ($p<0.002$). They also found a reduction in neurologic sequelae, *ie.* hearing impairment and paresis, in patients receiving dexamethasone. This was also statistically significant only in patients with *S. pneumoniae* meningitis, in which 0/45 surviving patients receiving dexamethasone had severe hearing loss, compared with 4/32 patients not receiving dexamethasone had severe hearing loss ($p<0.05$). They found no significant difference between those who did and did not receive dexamethasone for the time it took them to become afebrile or to regain consciousness, or in the mean admission and 24- to 36-hour CSF leukocyte count, glucose or protein content.[6]

In a review of treatment of bacterial meningitis, Quagliarello and Scheld recommended adjunctive dexamethasone therapy in children >2-months old who have bacterial meningitis, particularly those thought to be infected with *H. influenzae*, *ie.* in children not vaccinated against *H. influenzae* and those with CSF showing gram-negative coccobacilli. They believed in a more limited use of dexamethasone in adults with bacterial meningitis, especially to those with a high concentration of bacteria in CSF, *ie.* those with positive CSF Gram's stain, and evidence of increased intracranial pressure. For those children and adults, they recommended starting dexamethasone at 0.15 mg/kg body weight IV q6h for four days with or slightly before the first dose of antibiotics.[2]

While corticosteriods could theoretically reduce the penetration of antibiotics into the central nervous system, there is no clinical evidence to support this.[7] In a meta-analysis of randomized clinical trials since 1988 involving dexamethasone as an adjunctive therapy in bacterial meningitis involving primarily children, McIntyre *et al* found that adverse effects from dexamethasone use was only significant for secondary fever, but not for delayed CSF sterilization, late seizures, reactive arthritis, mortality or gastrointestinal tract bleeding.[5] Furthermore, the empirical use of dexamethasone with antibiotics for suspected bacterial meningitis in patients with aseptic meningitis appears to be safe. In a retrospective analysis of 32 children with suspected bacterial meningitis, there were no adverse effects associated with the use of dexamethasone even in those with nonbacterial infections or positive viral cultures.[7]

Regarding the timing and duration of dexamethasone regimens, Townsend and Scheld suggested starting it before or at the same time as the start of antibiotics, since the synthesis of TNF and IL-1 occur after the antibiotic-induced lysis of bacteria and exposure of cell surface components.[7] A meta-analysis of randomized clinical trials by McIntyre *et al* found that a two-day and four-day dexamethasone regimen resulted in similar outcomes, and is associated with a lower risk of gastrointestinal tract bleeding, and that a one-day regimen may be ineffective.[5]

Conclusion

There are no uniform guidelines for the adjunctive use of dexamethasone in adult bacterial meningitis. Because of the benefits demonstrated in childhood cases, and the potential benefits of antiinflammatory agents, one may consider using dexamethasone in adults with suspected bacterial meningitis, especially in high risk cases. In this case, dexamethasone 10 mg IV q6h for five days was started within six hours of initiating the antibiotic regimen in a patient with presumed bacterial meningitis and deteriorating mental status, and he recovered without sequelae.

Acknowledgements

We thank Erlaine F Bello, MD for her comments and for serving as the infectious disease consultant.

References:

1. Phillips EJ, Simor AE. Bacterial meningitis in children and adults: changes in community-acquired disease may affect patient care. *Postgraduate Medicine* 1998;103: 102-117.
2. Quagliarello VJ, Scheld, WM. Wood AJJ ed. Treatment of bacterial meningitis. *The New England Journal of Medicine* 1997; 336: 708-716.
3. Odio CM, Faingezicht I, Paria M, Nassar M, Baltodano A, Rogers J, Saez-Llorens X, Olsen KD, McCracken Jr. GH. The beneficial effects of early dexamethasone administration in infants and children with bacterial meningitis. *The New England Journal of Medicine* 1991; 324: 1525-1531.
4. Durand ML, Calderwood SB, Weber DJ, Miller SI, Southwick FS, Caviness VS, Swartz MN. Acute bacterial meningitis in adults: a review of 493 episodes. *The New England Journal of Medicine* 1993; 328: 21-28.
5. McIntyre PB, Berkey CS, King SM, Schaad UB, Kilpi T, Kanra GY, Perez CMO. Dexamethasone as adjunctive therapy in bacterial meningitis: a meta-analysis of randomized clinical trial since 1988. *JAMA* 1997; 278: 925-931.
6. Girgis NI, Farid Z, Mikhail IA, Farrag I, Sultan Y, Kilpatrick ME. Dexamethasone treatment for bacterial meningitis in children and adults. *Pediatric Infectious Disease Journal* 1989; 8: 848-851.
7. Townsend GC, Scheld WM. The use of corticosteriods in the management of bacterial meningitis in adults. *The British Society for Antimicribial Chemotherapy* 1996; 37: 1051-1061.

People know Pueblo for its...



Snazzy Web Site?
(www.pueblo.gsa.gov)



Famous Hot Salsa?

In Pueblo, the free information is also hot. You can get it by dipping into the Consumer Information Center web site, www.pueblo.gsa.gov. Or calling toll-free 1-888-8 PUEBLO (1-888-878-3256) to order the Catalog. Spice up your life with ready-to-use government information on topics like investing for retirement, getting federal benefits, raising healthy children and buying surplus government property. Sorry, salsa not available through our web site or Catalog.

U.S. General Services Administration

Harvard Medical School
Department of Continuing Education

Stanford Center for Research in Disease Prevention
Stanford University School of Medicine

Center for Alternative Medicine Research and Education
Department of Medicine
Beth Israel Deaconess Medical Center

Second Annual Conference

Complementary and Alternative Medicine: Practical Applications and Evaluations

Reports from prototype clinics, CAM networks, corporate medical directors. Financial, legal and ethical challenges. Research and survey updates.

Hyatt Regency Kauai Resort and Spa
Island of Kauai
Koloa, Hawaii

October 28-31, 2000

Under the Direction of:

David M. Eisenberg, MD
Harvard Medical School

Kenneth R. Pelletier, PhD
Stanford University School of Medicine

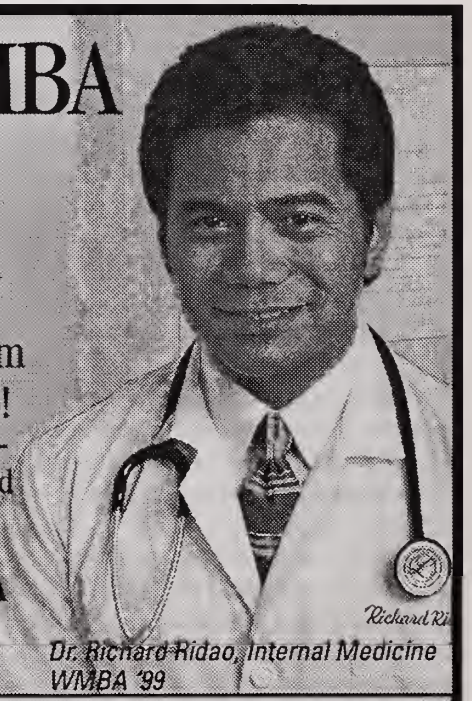
William L. Haskell, PhD
Stanford University School of Medicine

For more information, please contact: Professional Meeting Planners
Phone: 781-279-9887 or 1-877-234-6982 Fax: 781-279-9875 Email: info@pmpmeeting.com

Weekend MBA for Business Professionals

An 18-month MBA program that works the way *you* do!

Most MBA programs are not designed for busy professionals who have demanding, unpredictable schedules. So, we designed our **Weekend MBA for Business Professionals** to accommodate the way *you* work.



Dr. Richard Ridao, Internal Medicine
WMBA '99

Hawaii Pacific University

WEEKEND MBA FOR BUSINESS PROFESSIONALS
1164 Bishop Street, Suite 911
Honolulu, Hawaii 96813
Telephone: (808) 544-0279 • Fax: (808) 544-0280
www.hpu.edu • Member of the AACSB

85th Anniversary 1900 Hawaii Pacific University

Space JAM?

Lots of important files? No more room? Don't let a few dollars keep you frustrated.

FREE! FIRST MONTH* Any Size Locker

*Some restrictions may apply

SAFE AND CLEAN ENVIRONMENT TO STORE ALL YOUR DOCUMENTS!
"EZ" hours - Open 7 Days a week!
(One of the best in town - truly an EZ Access.)

BBB MEMBER HAWAII

Call Now For FREE TRUCK & DRIVER!

VISA MasterCard

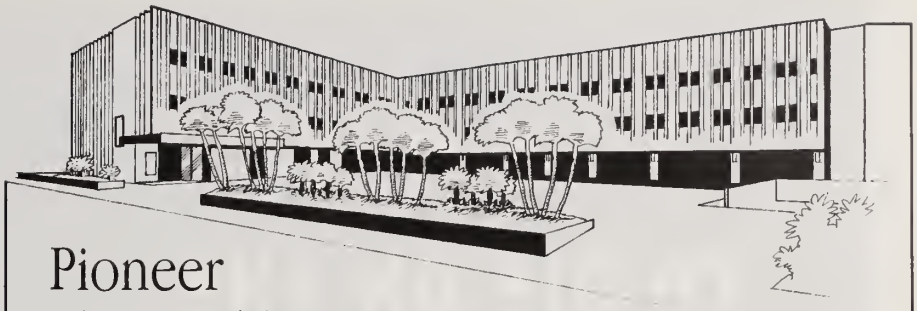


EZ-ACCESS STORAGE SYSTEMS

HAWAII'S LEADING SELF STORAGE FOR OVER 20 YEARS!

CENTRAL AREA (near Ward Ave.) Close to Waikiki, Ala Moana & Downtown. **592-0220**

NORTH KING AREA (in Kalihi) Close to Freeway, Kam Heights & Salt Lake. **832-0450**



Pioneer Plaza Kalihi

2153 North King Street

Considering the neighborhood and the great leasing opportunities, Pioneer Plaza Kalihi might very well be the individual or group practice location you've been considering to reach more patients! Whatever the case may be, there isn't a better site to bring your services to the neighborhood. Come visit us soon!

- Low Rents
- Lots of Parking
- Centrally Located
- Retail, Office, Professional
- From 150 - 20,000 Square Feet
- Established Business & Residential Area

AVAILABLE NOW!

For Information: Call 955-7377

Aloha Laboratories, Inc.
...When results count

CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

David M. Amberger, M.D.
Laboratory Director

Phone:(808) 842-6600
Fax: (808) 848-0663
E-mail: results@alohalabs.com
http://www.alohalabs.com

Arleen D. Jouxson, Esq.
Attorney at Law



A.K.A. Arlene Meyers, MD, MPH

- **Wahiawa pediatrician since 1979**
- **Associate Clinical Professor, JABSOM**
- **1998 Roscoe Pound award winner in health care law**
- **President & founder of the Hawaii Coalition For Health**

NEED HELP?

- **with Par. Agreements?**
- **Understanding health care laws?**
- **Resolving disputes with health insurers?**

CALL 621-8806 (Oahu) for more information or for a free initial consultation at your place of business.

302 California Ave., #209, Wahiawa, HI 96786, Ph: 621-8806; Fax: 622-5599

FIVE WAYS TO DIE ON THE GOLF COURSE:

1. Hit by a golf ball.
2. Run over by a golf cart.
3. Whacked by a golf club.
4. Struck by lightning.
5. Forgot your hat.

Surprisingly, one million new cases of skin cancer are detected every year. One person an hour in the U.S. dies from melanoma, the deadliest form of skin cancer. If you spend a lot of time in the sun, you should protect yourself. One out of five Americans develops skin cancer during their lifetime. Don't be one of them. Stay out of the midday sun. Cover up. Wear a hat. Seek shade. And use sunscreen. For more information on how to protect yourself from skin cancer, call 1-888-462-DERM or visit www.aad.org.

AAD 1938 AMERICAN ACADEMY OF DERMATOLOGY

AMERICAN ACADEMY OF DERMATOLOGY

Janssen Pharmaceutica

Is proud to support the
Hawaii Medical Journal

World leader in antimycotic research

JANSSEN • PHARMACEUTICA • • RESEARCH FOUNDATION •

Titusville, NJ 08560-0200

®1998 Janssen Pharmaceutica

Nurses the of Healthcare

Registered Nurses, Licensed Practical Nurses, Medical Assistants

Qualified and experienced in a wide variety of job settings.

All applicants carefully screened and matched to your specific job.

We are fully responsible for payroll, taxes, benefits and insurance.

Kahu Malama Nurses, Inc.

Short & Long Term Staff Relief and Permanent Placement

Serving Hawaii since 1982 *Available 24 hours*

(808) 951-0111 Fax: 949-3834 **Inter-island: 1-800-773-9021**

e-mail: nurses@kahumalama.com

WE COLLECT PAST DUE ACCOUNTS

Only 25%* fee for Health Care Firms!

Why give up more!

Wood & Tait

HI Collection & Detective Agency
Staff on Kauai, Oahu, Maui, & Hawaii
http://www.woodtait.com

739-0433

jwood@woodtait.com

*Applies to accounts assigned during this promotion; no restrictions as to dollar size or age of accounts. Fee will increase to 50% if litigation or forwarding required; you will receive a contract.

(Continued from p. 298)

4. Ohkubo Y, Kishikawa H, Araki E, et al. Intensive insulin therapy prevents the progression of diabetic microvascular complications in Japanese patients with non-insulin-dependent diabetes mellitus: a randomized prospective 6-year study. *Diabet Res Clin Pract* 1995;28:103-17.
5. Stamler, J, Vaccaro, O, Neaton, JD, et al. For the Multiple Risk Factor Intervention Trial Research Group: Diabetes, other risk factors, and 12-yr cardiovascular mortality for men screened in the Multiple Risk Factor Intervention Trial. *Diabetes Care* 1993,16:434-444.
6. Klein, R, Klein, BEK, Moss, SE, et al. Relationship of hyperglycemia to the long-term incidence and progression of diabetic retinopathy. *Arch Intern Med* 1994;154:2169-2178.
7. Abraira, C, Colwell, JA, Nuttall, FQ, et al. And the VA CSDM Group. Veterans affair cooperative study on glycemic control and complications in type 2 diabetes (VA CSDM). Results of the feasibility trial. *Diabetes Care* 1995;18:1113-1123.
8. UKPDS Group. Intensive blood-glucose control with sulphonylureas or insulin compared with conventional treatment and risk of complications in patients with type 2 diabetes (UKPDS 33). *Lancet* 1998;352:837-53.
9. UKPDS Group. Effect of intensive blood-glucose control with metformin on complication in overweight patients with type 2 diabetes (UKPDS 34). *Lancet* 1998;352:854-65.
10. Henry RR. Type 2 diabetes care: the role of insulin-sensitizing agents and practical implications for cardiovascular disease prevention. *Am J Med* 1998 Jul 6;105(1A):20S-26S.
11. UKPDS Group. Tight blood pressure control and risk of macrovascular and microvascular complications in type 2 diabetes (UKPDS 38). *BMJ* 1998;317:703-713.
12. UKPDS Group. Efficacy of atenolol and captopril in reducing risk of macrovascular and microvascular complications in type 2 diabetes (UKPDS 39). *BMJ* 1998;317:713-20.
13. University Group Diabetes Program. A study of the effects of hypoglycemic agents on vascular complications in patients with adult onset diabetes. *Diabetes* 1970;19(suppl2):747-830.
14. Scheen AJ, Lefebvre PJ. Oral antidiabetic agents. A guide to selection. *Drugs* 1998 Feb; 55(2):225-36.
15. Bloomgarden ZT. International Diabetes Federation meeting, 1997. Issues in the treatment of type 2 diabetes; sulfonylureas, metformin, and troglitazone. *Diabetes Care* 1998 Jun;21(6):1024-6.
16. Nathan DM. Some answers, more controversy, from UKPDS. United Kingdom Prospective Diabetes Study (comment). *Lancet* 1998;352:832-33.
17. American Diabetes Association: clinical practice recommendations 1999. *Diabetes care* 1999; 22 Suppl 1:S1-114.

ASSISTANT PROFESSOR, 2 positions, Position #88860T and 85025T, Geriatric Medicine Program, Dean's office, UH John A. Burns School of Medicine, F/T, temporary, non-tenurable, to begin approx. 08/00 pending position clearance and funding availability. Duties: **(Pos. #88860T):** Provide clinical services at the Hawaii State Hospital; teach medical students, residents, fellows, and interdisciplinary continuing education. **(Pos. #85025T):** Develop an academic program in end-of-life care and or Geriatric Medicine, undertake didactic teaching, clinical teaching services, research, and publications. MQs: **(Pos. #88860T):** M.D. or D.O. degree; board eligible or board certified in Internal Medicine by the ABIM, eligible for Hawaii license, demonstrated ability in teaching. **(Pos. #85025T):** Same as Pos. #88860T plus two-year fellowship and CAQ in Geriatric Medicine. Min Annual Sal: $78,924. To Apply: Send updated CV, bibliography, letter of application, and 3 letters of recommendation to: Patricia Lanoie Blanchette, M.D., MPH, Director, Geriatric Medicine Program, 347 No. Kuakini St., HPM 9, Honolulu, HI 96817. 808-523-8461; FAX 808-528-1897. Closing Date: July 20. An EEO/AA Institution.



Classified Notices

To place a classified notice:

HMA members.—Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.

Nonmembers.—Please call 536-7702 for a non-member form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Office Space

ALA MOANA BLDG.—PHYSICIANS WANTED to share space and support services. Interest in physical rehab. preferred. We have flexible rental arrangements starting at one half-day per week. Run your practice with no fixed overhead. Contact Dr. Speers, REHABILITATION ASSOCIATES, 955-7244.

PIONEER PLAZA KALIHI.—CENTRALLY LOCATED in established business/residential area. Only contemporary building in area with high traffic, lots of parking, good tenant mix including medical and dental. Spaces from 150-20,000 sf. Excellent clinic or group practice spaces. Call 955-7377.

Wanted

PSYCHIATRIST.— Kaneohe residential Program for adolescents seeks consultant two half-days per month. Schedule, duties, compensation negotiable. Contact Administrator: RAINBOW HOUSE 239-2399.

HAWAII PERMANENTE MEDICAL GROUP.— Kaiser Permanente. Hawaii's most established multi-specialty group of 300 physicians recruiting for:

- BC/BE internal medicine hospitalists, staff and Locum Tenen positions available, servicing all hospitalized patients in 200-bed Kaiser hospital on Oahu, position(5) immediately available.
- BC/BE general internist for busy outpatient clinic, inpatient duties (CCU/ICU/ventilator management) and call, practice based in Kona on the Big Island (affiliated with Kona Community Hospital.) Position available mid-August 2000.

Applicants must have a commitment to quality care, patient advocacy, and involvement in patient and professional education. We offer competitive salary, comprehensive benefits, relocation assistance and more.

Send CV to: Physician Recruitment, HPMG, 3288 Moanalua Road, Honolulu, HI 96819 or Fax (808) 834-3994. EOE

URGENT CARE CALL-IN PHYSICIANS.— STRAUB CLINIC is seeking primary care or emergency medicine call-in physicians for its Urgent Care and Doctors On Call Clinics. An excellent opportunity for extra hours or periodic work. Fax CV to: Ellen Saiki, Physician Recruitment Coordinator, Straub Clinic and Hospital, 888 South King Street, Honolulu, HI 96813; FAX (808) 522-4038.

The Weathervane Russell T. Stodd MD

Always Remember To Pillage Before You Burn.
It has been suggested that any doctor who signs a contact without reading it deserves whatever comes down. As part of a practice management course developed several years ago for the American College of Gastroenterology Philip Grossman. a Miami MD, sent phony contracts from a fictional managed care company. The contracts included what were called absurd statements and ridiculous terms. Of course, a majority of the physicians accepted the terms of the contract, either signing and returning it, or agreeing over the phone. It appeared that the majority never read the contract at all. The excuse is that physicians are swamped with work and are too busy to labor through the jargon. "Eternal vigilance is the price of freedom," somebody said once, and it continues to be a vital axiom in this third millennium.

Don't Worry. It Only Seems Kinky The First Time.
Now there is real promise of saving the vision for macular degeneration patients with the advent of photodynamic therapy. Approximately 200,000 patients each year are afflicted with wet macular degeneration when abnormal blood vessels begin to grow beneath the macula, and leak fluid and blood, threatening a rapid loss of macular vision. The use of a light-activating drug targets the blood vessels and a cool laser stimulates the drug destroying the leaky vessels without damaging the surrounding healthy tissue. This safe procedure represents a great improvement over traditional high-intensity laser therapy which necessarily destroys healthy tissue along with the sub-retinal net. Obviously, the procedure does not regenerate damaged tissue, but if diagnosis is made promptly and photodynamic therapy utilized, useful macular function may be retained.

Some People Go About Doing Good, Others Just Go About.
Health Risk Management Inc. is a consulting company evaluating individual states quality of medical care. Using 46 quality indicators that consider what individuals, health care systems, and states do to affect health status and care, the company came up with a statewide ranking system. Interestingly, states rated best in overall quality, also generally have lower per-capita health care costs. Number one in quality was found to be Minnesota with a per-capita cost of $228, immediately followed by Hawaii with a cost of $227. Scraping the bottom in quality was a tie between Mississippi and Louisiana. The top 10 states had an average per-capita health care expenditure of $239 in 1999, 11% lower than the bottom 10 states average of $268.

You Never Really Learn To Swear Until You Deal With An Insurer.
Not unlike a local company (no names, please), Aetna US Healthcare, the nation's largest health insurer, is under attack from physicians for low reimbursement and administrative manipulation. In seeking to polish up their image, Aetna is on the attack with full-page advertisements in the New York Times. "We want to hear from the people who matter the most, patients, business and medical professionals." The medical CEO, Arthur Leibowitz, M.D. says the company listens to the physicians and visits them at least once a year in their offices. The company opened a physicians relations unit to increase direct contact with patients and doctors. One doctor who canceled his contract, said it is pure public relations baloney and nothing more. He likened the PR ploy to Saddam Hussein saying, "I'm just misunderstood. I don't understand why the world hates me. Just e-mail me at Saddam.com."

As Ye Smoke, So Shall Ye Reek.
A very interesting study published in the American Journal of Public Health authored by two Boston University researchers, examined how anti-tobacco ads effect teen age smoking. The four year study encompassed children 12 years and above, and found that the children who had been regularly exposed to the state's anti-smoking TV spots were half as likely to have started smoking as their peers who saw the ads less frequently. However, children 15 years and older when the ads began did not change their smoking habits. The study is significant because it gauges the effects on children of a state-wide anti-smoking campaign over an extended period of time. It emphasizes the importance of early education, because once a child is 15 years old, it seems too late to reach them. Let's hope that the Hawaii State Legislature will take note of a good way to use the tobacco settlement cash.

When You Jump For Joy, Beware That No One Moves The Ground Under Your Feet.
Some investors are hurrying to buy into *Fusion Medical Technologies*. The company has come up with a product called FloSeal, a biodegradable product made of collagen and thrombin that stops active bleeding. The FDA approved the product in December as a hemostat sealant. FloSeal takes a minute to prepare, looks like caviar, can be squirted from a syringe, and can stop the bleeding in a few minutes. Other products, such as fibrin glues, can take from 15 to 40 minutes. According to the company, in a clinical trial of 309 patients, FloSeal stopped bleeding within 10 minutes in 96% of cases, compared with 77% of patients who were treated with Gelfoam and thrombin. The product costs about $130 per kit, which should attract hospital buyers, and can reduce operating room times. Of course, the success of the product will hinge on how well the company can get the product to the market, and especially how they can persuade surgeons to change their habits.

Nothing Is So Good As It Seems Beforehand.
Not to be left at the post in refractive surgery, Bausch and Lomb has received FDA approval to market their vision-correction laser in the United States. A powerful company in the eye care market, B&L will prove a strong competitor to industry leader Visx. The marketplace for refractive surgery continues on its wild ride as the B&L announcement comes on the heels of a price-cutting war with Nidek and others. B&L has been marketing their laser for three years in Europe and executives claim they captured about one third of the market there. They expect to do as well in the US.

Treatment Of A Non-Disease Is A Little Bit Silly.
In homes with small children, a bottle of ipecac is sure to be in the medicine chest. Virtually every parenting magazine or family medical book urges parents to stock the famous syrup. Now an increasing number of doctors and poison experts are telling parents to toss ipecac out. A study published in the Journal of Toxicology showed that patient outcomes weren't affected by the use of ipecac, and sometimes interfered with other treatment. While the drug does induce vomiting, studies have shown that its use doesn't make any significant difference in the treatment of poisonings. Even if the drug is taken immediately after ingesting a toxic substance, the vomiting removes only 30 to 50% of the substance. Also, the vomiting may produce additional damage on the way back up. Other treatments, such as activated charcoal and pumping the stomach, have little impact if administered more than an hour after poisoning. But the clinching argument against such methods is that in 1998, 99.9% of calls to the nation's poison control centers involving children under age six were for poisonings that resulted in minor or no health problems. However, it is nearly impossible to convince parents that the best intervention is to give the child a glass of milk to dilute the substance and soothe the tissues.

Roaches Are Not As Stupid As You Think; For Example, They Have No Lawyers.
Doctors at the University of Pittsburgh have answered an age old question – how to remove an arthropod from the external ear canal. A patient was seen in the emergency room with a cockroach in each ear canal. In a controlled study, researchers (?) placed mineral oil in one ear and 2% xylocaine in the other. The xylocaine roach exited promptly, but the mineral oil roach had to be extracted – apparently belching and slightly slippery as well.

ADDENDA
- ❖ With a blink, your eyelid stays closed for 1/20th second, then starts up leaving a film of tears behind.
- ❖ Your eye processes grey more easily than any other color.
- ❖ If April showers bring may flowers what do may flowers bring? Pilgrims.
- ❖ I like cats too. Let's exchange recipes.

Aloha and keep the faith —rts■

One of a kind.



Unmistakable.

At MIEC, we know what it means to stand out in the crowd. Twenty-five years ago, we started the West's first doctor-owned, not-for-profit malpractice insurance company. The idea quickly caught on, and now there are dozens of "doctor-owned" companies throughout the country.

But there is only one MIEC. Our rate and dividend history is unparalleled. Guess that's why we don't need a large sales or marketing staff. Our track record speaks for itself.

The original is still the best. Call us.

Medical Insurance Exchange of California
6250 Claremont Avenue, Oakland, California 94618
Telephone 800-227-4527 www.miec.com
HAWAII CLAIMS OFFICE: 1360 South Beretania Street, Honolulu, Hawaii 96814

Our 25th Anniversary, 1975–2000

Sponsored by Hawaii Medical Association



DERMIK

Innovation that makes a world of difference

Hawaii medical journal
v. 59
no. 7
July 2000
Received on: 08-18-2000
Brown University Library
SCI

Our Mission: To bec
leader in providing inn
dermatological product
patients and healthcar

To learn more, call 1.610.454.8110, or visit our site on the World Wide Web at http://www.dermik.com

Platinum Benefactor

Honor Society

Dermik Laboratories supports research in skin care through a grant to the Dermatology Foundation

DERMIK LABORATORIES, INC.

Dedicated to Dermatology™

A RHÔNE-POULENC RORER COMPANY

HAWAII MEDICAL JOURNAL

1-SIZE
R15
H25x
SCI

August 2000 Volume 59, No. 8 ISSN: 0017-8594



Serials Dept
Sciences Library
Box 1
Brown University
Providence, RI 02912-0001

HAWAII MEDICAL ASSOCIATION 1856

Stability
Commitment
And a good set of ears

Listening. It's a valuable skill, particularly in today's complex health care arena. To help ensure high-quality care and affordable coverage for our members, HMSA actively seeks out the knowledge and expertise of Hawaii's physician community.

As participants of HMSA and Health Plan Hawaii boards and advisory/liaison committees, hundreds of Hawaii physicians, dentists and other health care professionals provide valuable input regarding medical policy, health plan benefits, quality assurance and other important health care issues. Their efforts have a direct, meaningful impact on HMSA members and the community at large.

Here are the many boards and panels that enable HMSA to make sure that Hawaii's physicians are indeed heard:

HMSA Board and Committees
Board of Directors
Benefits Administration Committee
Fee Review Committee
Medical Review Committee
Quality Oversight Committee

Health Plan Hawaii Board and Committees
Board of Directors
Quality Management Committee

Physician Liaison Committees
Honolulu Physician Liaison Committee
West Oahu Physician Liaison Committee
Windward Oahu Physician Liaison Committee
East Hawaii Physician Liaison Committee
West Hawaii Physician Liaison Committee
Kauai Physician Liaison Committee
Maui Physician Liaison Committee
Vision Liaison Committee

Program Advisory Committees
Asthma Guidelines Advisory Group
Credentialing Committee
Disease Management Physician Advisory Committee
HealthPass Medical Advisory Committee
Pharmacy and Therapeutics Advisory Committee
- Asthma/Allergy Subcommittee
- Cardiology Subcommittee
- Dermatology Subcommittee
- Endocrinology Subcommittee
- Ophthalmology Subcommittee
- Psychiatric Subcommittee

Quality Improvement Committee
WorkComp Hawaii Advisory Committee

For a list of current board and committee physician membership, please call 948-6330 on Oahu or toll-free 1 (800) 790-4672 from the Neighbor Islands.

HMSA and Health Plan Hawaii. Health plans that listen.

HMSA Blue Cross Blue Shield of Hawaii
Choices for a Healthier Hawaii

Health Plan Hawaii™
A Federally Qualified HMO Affiliate of HMSA

Managed Care Organization NCQA Accreditation ★★★★ EXCELLENT
For Commercial HMO

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
Vincent S. Aoki MD, Benjamin W. Berg MD,
John Breinich MLS, Satoru Izutsu PhD,
James Lumeng MD, Douglas G. Massey MD,
Myron E. Shirasu MD, Frank L. Tabrah MD,
Alfred D. Morris MD

Journal Staff
Managing Editor: Becky Kendro
Editorial Assistant: Drake Chinen

Officers
President: James Lumeng MD
President-Elect: Philip Hellreich MD
Secretary: Gerald McKenna MD
Treasurer: Paul DeMare MD
Past President: Patricia L. Chinn MD

County Presidents
Hawaii: David Camacho MD
Honolulu: Walter K.W. Young MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Patrick Aiu MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 1999 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 320

Letter to the Editor 320

Medical School Hotline
Satoru Izutsu PhD 321

In Memoriam 321

Epidemiology of Neural Tube Defects, Hawaii, 1986-1997
Mathias B. Forrester BS and Ruth D. Merz MS 323

Alcohol Use in Hawaii
Earl S. Hishinuma PhD, Stephanie T. Nishimura MSW, Robin H. Miyamoto PhD, and Ronald C. Johnson PhD 329

Emphysematous Pyelonephritis
Lisa Hui, Medical Student IV, MBA and Jinichi Tokeshi MD 336

News and Notes
Henry N. Yokoyama MD 338

Classified Notices 341

Weathervane
Russell T. Stodd MD 342

Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

Old Plantation

Home of Victoria Robinson and Curtis P. Ward, this stately mansion was completed in 1880.

Editorial

Norman Goldstein MD
Editor, Hawaii Medical Journal

The Hawaii Birth Defects Program

Birth defects are the number one cause of infant mortality in Hawaii, with over 400 fetal deaths each year and rising. The Hawaii Birth Defects program of the University of Hawaii at Manoa was formed twelve years ago, and is the primary source of data on Statewide birth defects including those of the neural tubes.

With one in every 1,000 births in the US having a neural tube defect, the lay press has promoted the use of folic acid for pregnant women. Now, we physicians need to be aware of the personal and social significance of treatment and non-treatment of the various tube defects.

Hawaii Medical Journal thanks Ruth D. Merz, MS, Administrator of the Hawaii Birth Defects Program, and Mathias B. Forrester, who worked with her on the manuscript, Epidemiology of Neural Tube Defects in Hawaii. The Program monitors more than 1,000 different birth defects in our state, and can be reached at 808-832-0278.

Alcohol Use in Hawaii

The manuscript by Earl S. Hishinuma PhD, *et al*, is significantly longer than most of our published papers. It is so important and has so much significant data, we could not reduce it, and the bibliography is extremely intensive.

The lead article in the July 2000 issue of the Journal of American Academy of Dermatology ("The Blue Journal") is a very complete paper, including color photographs on the "Cutaneous Manifestations of Alcohol Abuse."* Contact the Hawaii Medical Library for a black-and-white photocopy or call my office for color copies.

The study by Hishinuma and Associates again confirms that Hawaii is an ideal location for clinical research. I have long emphasized to basic researchers and clinical researchers as well as to pharmaceutical companies that there is no better place for multiethnic studies than Hawaii where we have a "rainbow of skins."

Emphysematous Pyelonephritis

The third manuscript is not about a common disorder, but nevertheless the paper is an important one. Mahalo to Jinichi Tokeshi MD and medical student, Lisa Hui, for this submission.

* Smith E & Fenske NA. Cutaneous Manifestations of Alcohol Abuse. J Am Acad Dermatol 2000; 43:1-16

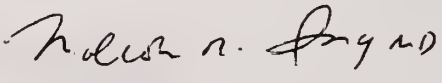
Letter to the Editor

Physicians' Greatest Enemy – Complacency!

There is not a day you can enter a doctor's lounge or locker room and not hear stories of the financial bind that these physicians suffer from decreasing medical insurance reimbursement. Gone are the days when physicians could devote their attention only to medical practice and let the financial reward take care of itself. Some how, during the past two decades, physicians came to be viewed by the public as "earning too much." Little attention was paid to the long hours of service by physicians required to attend to the acute or chronic medical and surgical problems. The prevailing public opinion has become; medical care costs too much in the U.S. Without looking at the real causes for the rising costs of medical care, such as pharmaceutical and technological costs, the doctors became the scape goats for the problem – not without the complacency of the physicians themselves.

In this state, supporting the cause of quality medical care, which was recognized to be in jeopardy by the Hawaii Coalition for Health and a few clear thinking HMA leaders, there has been a movement to remedy this predicament. Yet, it is astounding today to realize that the average physician in this state is not aware of the contents of the recent agreement signed by HMSA with the State Insurance Commissioner. They are not aware that the practicing physicians, approved by their own specialty, may now represent the interests of these private practitioners in fee discussions at HMSA. Thanks to the diligence and hard work of Dr. Arleen Meyers and the Hawaii Coalition for Health, physicians may now have at least some influence in fee discussions.

However, I have found that most physicians are either too busy or too complacent to take advantage of this new opportunity. Too bad, because with rising costs of providing quality medical care – increasing rents, salaries for office staff, equipment, etc, this society is fast becoming an environment in which one has to be financially independent to practice quality medicine! Complacency got us into this rut, but we need to recognize that the absence of complacency may get us out!



Malcolm R. Ing, M.D.
Councilor from Honolulu to the Hawaii Medical Association

Until there's a cure, there's the American Diabetes Association.

Medical School Hotline

The Department of Public Health Sciences and Epidemiology (DPHSE)

Satoru Izutsu, Ph.D. , Associate Dean
John A. Burns School of Medicine
University of Hawaii

On June 5, 2000, the University of Hawaii School of Public Health, with a rich and proud history, ended its accredited status with the Council on Education for Public Health (CEPH), primarily due to budgetary constraints imposed by the State's depressed economy. The remaining faculty, staff and students will join the John A. Burns School of Medicine as a Department of Public Health Sciences and Epidemiology beginning in the Fall 2000 semester.

The School of Public Health began as a Department in 1962 and was accredited as a School in 1965. The School's primary goal was "to promote the appropriate application of public health principles, both in those U.S. communities with multicultural populations and the international arena."[1] The School's activities specifically addressed the public health needs of Hawai'i and the Asia/Pacific Basin Region. The School's curricula offered specialization areas in community health education and development, health services administration and planning, maternal and child health, biostatistics, environmental and occupational health, and epidemiology.

By its thirty-eighth year, the School had graduated 3,027 students with a Master of Public Health, 310 students with a Master of Science in Pubic Health, 85 with a Doctorate of Public Health, and 40 with a Doctor of Philosophy in Biomedical Sciences (Biostatistics and Epidemiology). Today, graduates are located throughout the world with concentrated numbers in Hawaii, the Pacific Basin countries, South and Southeast Asia and Asia. Many are in the highest offices of health and government.

An Associate Dean for Public Health will lead the conversion of the School into a Department. The Associate Dean's responsibility will be to oversee the redevelopment of the new academic program to assure that there will be strength in the not too distant future to seek reaccredidation as a School of Public Health.

Timely, efficient, and smooth transition of the School of Public Health into the School of Medicine was planned by twenty-three faculty and staff from both schools, appointed by the Dean of the School of Medicine. Four subcommittees were organized; Finance/ Administrative Support, Space Allocation, Student Services, and Educational/Faculty Resources. The key features of the reports from the subcommittee included the following: establishing a Department of Public Health Sciences and Epidemiology in the School of Medicine; transferring three of the 12 remaining faculty to positions within the University; assigning all non-faculty personnel to appropriate positions within the new department and the school of medicine; merging the finance office and personnel with that of the School of Medicine; expanding the School of Public Health library to support both the Department and the School of Medicine; providing up to seven FTEs for recruitment (four from the Department of

Continued on p. 340

In Memoriam



LEE MC CASLIN, age 86, former executive director of the Hawaii Medical Association from 1956 to 1970, passed away May 23, 2000 at her home. Lee also served as managing editor of *Hawaii Medical Journal* which won numerous awards during her tenure. In September 1991, at the 50th anniversary celebration of HMJ, she reminded us that the history of Hawaii Medial Association and the growth and changes in the medical community, will long be remembered through the Journal. And perhaps 100 years from now, no one will remember that the Journal at one time accepted cigarette advertising.

Lee came to Hawaii about the same time the Journal began when she and 3 or 4 friends from Los Angeles took a late fall vacation to Honolulu on the Lurline. They timed it perfectly as they were caught by the December 7th attack and there was no way home. Although her West Coast family just couldn't imagine how Lee could even get a square meal, much less defend herself against continued enemy attack, the only answer from Lee was that she was fine and eating well.

She went to work for Theo H. Davies and legend has it that she was to receive an award for being the top salesman in the country for promotion of a canned meat product that is still tops in the Islands today. When the award presenters found out she was a woman, they not only withdrew the award but withdrew the account! She relished that story, especially since she always used her middle name, Lee, so that no one could discern her gender.

During her tenure at the Hawaii Medical Association, membership grew and expanded. The Association was deeply involved with the national organization, the American Medical Association, and focused on issues such as quality of care, legislation, development of the worker's compensation medical program, development of the Medicaid program, the Hawaii Tumor Registry, and relationships with health insurers.

Following her employment at HMA, she became a successful realtor and broker. She became enamored of any and all things Japanese, studying the Japanese language at every opportunity. She lived in Tokyo from the late 70's until the mid-80's, working for an American company that taught English to young Japanese business executives. While there, she met another teacher, Tom Hasegawa. She married Tom and together they returned to Honolulu. They both were very involved in real estate. Lee is also survived by cousins Jack Ketcham and Tracie Ferreira and *hanai* daughter Karen.

Our pledge to you

As Straub physicians, we welcome your referrals... and pledge to:

- Report our evaluation to you promptly by phone, fax or mail (whatever you prefer).
- Never make secondary referrals without your approval.
- Always direct the patient back to you for continuing care.

To make your referrals easy, we have a Physician Referral Specialist, Kym Kaohi. To contact Kym and to get a binder on Straub specialists and services, call 522-4444.





Straub
Partners in health
straubhealth.com

For assistance, call Kym at 522-4444

Epidemiology of Neural Tube Defects, Hawaii, 1986-1997

Mathias B. Forrester BS and Ruth D. Merz MS

Abstract

Neural tube defects (NTDs) in Hawaii between 1986 and 1997 were examined using data from a statewide birth defects surveillance system. The prevalence increased significantly over the twelve-year period. NTD prevalence did not appear to vary by place of residence. The relationship of type of defect, maternal age, and infant/fetus sex was similar to that reported in the literature.

Introduction

Neural tube defects (NTDs), a group of serious defects including anencephaly, spina bifida, and encephalocele, are one of the most common groups of birth defects in the United States, affecting approximately one in every 1,000 births each year.[1] Anencephaly is almost invariably fatal. Anencephalic infants who are not stillborn usually expire within several hours or days after birth. The prognosis of an infant with spina bifida depends upon the lesion's location and the presence of other defects. An infant with spina bifida often has some degree of limb paralysis or weakness and lack of bowel and bladder control. The lifetime direct and indirect costs for each person with spina bifida is estimated to be $300,000 (based on 1992 dollars), and the total medical costs for all individuals with spina bifida account for approximately $500 million each year.[2]

The etiology of NTDs has been studied extensively, but is still not completely understood. Both environmental and genetic factors are known to affect their prevalence. The recurrence risk for NTDs is 3-4 percent.[3] Racial/ethnic differences have been reported for NTDs, with the defects most common among Hispanics, followed by non-Hispanic whites, African-Americans, and Asians/Pacific Islanders.[4-10] The United States and other parts of the world have experienced a decline in the birth prevalence of NTDs over the last several decades.[4,5,11,12] Some of this decline in NTD prevalence may be attributed to the fact that, over the last several decades, prenatal screening of maternal serum alpha-fetoprotein, human chorionic gonadotropin, and unconjugated estriol and antenatal diagnosis with ultrasound have allowed a proportion of fetuses with NTDs to be identified in utero and subsequently terminated, thus reducing the birth prevalence of NTDs.[13-15] However, this decline was reported prior to widespread prenatal screening and diagnosis and has been observed in areas where elective termination is not allowed.

NTDs rates can vary widely from state to state[5,13] and between regions within a state.[16] Reports of the influence of socioeconomic status on NTD risk have been mixed.[3] The risk for NTD has been found to be highest among the youngest and/or oldest maternal age groups.[4,7,17] Females are affected with NTDs more often than males.[3,6,11,12,18]

Maternal factors such as hyperthermia,[19] diabetes,[3,8] obesity,[20] and valproic acid use[3] have been associated with increased NTD risk. Investigations have reported that maternal use of alcohol,[3] caffeine,[21] oral contraceptives,[3] contraceptive spermicides,[22] ovulation-inducing drugs,[23] and recreational drugs[3] do not appear to influence NTD prevalence while exposure to glycol ethers,[24] radiation,[25] arsenic,[26] hazardous waste sites,[25,27] and drinking water contaminants[25] may increase NTD risk.

Maternal periconceptional consumption of folic acid (folate) has been found to reduce NTD risk by as much as seventy percent.[28] The exact mechanism through which this preventative effect operates is unclear, although homocysteine metabolism has been suggested .[29] In 1992, the U.S. Public Health Service recommended that all women who can become pregnant consume 0.4 mg of folic acid each day. And as of January 1, 1998, all "enriched" cereal grains were required by the U.S. Food and Drug Administration to be fortified with folic acid. However, the recommendation and other activities designed to increase public awareness of the importance of folic acid in reducing NTD risk have resulted in only slight increases in knowledge and folic acid consumption over initial low levels,[28] and it is too soon to evaluate the effectiveness of the fortification effort.

The purpose of this study was to examine the prevalence of various NTD diagnostic categories with respect to selected demographic factors such as year of delivery, infant/fetus sex and maternal race/ethnicity, age, and place of residence in Hawaii between 1986 and 1997.

Methods

Data were obtained from the Hawaii Birth Defects Program (HBDP), an active, population-based surveillance registry for birth defects for the entire state of Hawaii. The Program collects all pregnancies regardless of outcome (livebirth, fetal death, elective termination) and gestational age at the end of the pregnancy. Pregnancies of interest are ascertained from diagnostic code lists and other reports provided by all birth hospitals, facilities that perform elective

Correspondence to:
Ruth D. Merz, Administrator, Hawaii Birth Defects Program,
620 Waipa Lane #206, Honolulu, Hawaii 96817-3533,
Tel: (808) 832-0278, Fax: (808) 832-0288,
E-mail: hbdp@crch.hawaii.edu

This research was supported by a contract with the Hawaii State Department of Health, Children With Special Health Needs Branch, and grants from the Centers for Disease Control and Prevention, March of Dimes Birth Defects Foundation, Ronald McDonald Children s Charities, George F. Straub Trust, Queen Emma Foundation, Pacific Southwest Regional Genetics Network, and the Kamehameha Schools/Bishop Estate.

terminations due to fetal anomaly, tertiary care hospitals, and all clinics and laboratories in Hawaii that conduct prenatal diagnostic tests and genetic counseling. In addition to diagnostic information on each infant/fetus of interest, the HBDP collects data on demographic factors, health behaviors, and other medical information regarding the biological parents from the medical records.

The present study includes as cases all NTD-affected pregnancies which ended in Hawaii between 1986 and 1997, inclusive. Any cases where the diagnosis or place or type of pregnancy outcome could not be confirmed were excluded from the analysis. Data collected for each case included the type of NTD, end of pregnancy year, maternal race/ethnicity, maternal age, residence at delivery, and infant/fetus sex. Not all variables were available for every case, so the sum of cases reported for a given variable may not equal the total number of cases. Cases were sorted into diagnostic categories of anencephaly, spina bifida, encephalocele, and total NTDs. Any infant with more than one NTD was assigned to a single category in the following descending order of priority: anencephaly, spina bifida, encephalocele. No attempt was made to adjust for similar times of conception between the livebirths/fetal deaths and the elective terminations. Maternal race/ethnicity was assigned to one of four groups: white (excluding Hispanic), Far East Asian (Japanese, Chinese, Korean), Pacific Islander (Hawaiian, Samoan, Guamanian), and Filipino. Women with other or unknown race/ethnicity (n=24) were excluded from the analysis of this particular demographic factor. Women of mixed race/ethnicity were assigned to a single race/ethnicity according to the following rules: 1) If two races were noted and one was white, the other race was assigned; 2) If two or more races were listed and one was Hawaiian, the assigned race was Hawaiian; 3) If two or more races were listed and none of them was Hawaiian, the first race listed was assigned, unless it was white, in which case the second race was assigned.

The total prevalence for the twelve-year period and the prevalence by two-year interval of delivery per 10,000 livebirths and fetal deaths were calculated for each of the defect categories. For all other demographic factors, rates per 10,000 livebirths alone were calculated. Denominators were provided by the Hawaii State Department of Health, Office of Health Status Monitoring, as derived from birth and fetal death certificates. Secular trends were analyzed by the Chi-square tests for trend. Ninety-five percent confidence intervals were calculated by Poisson probability.

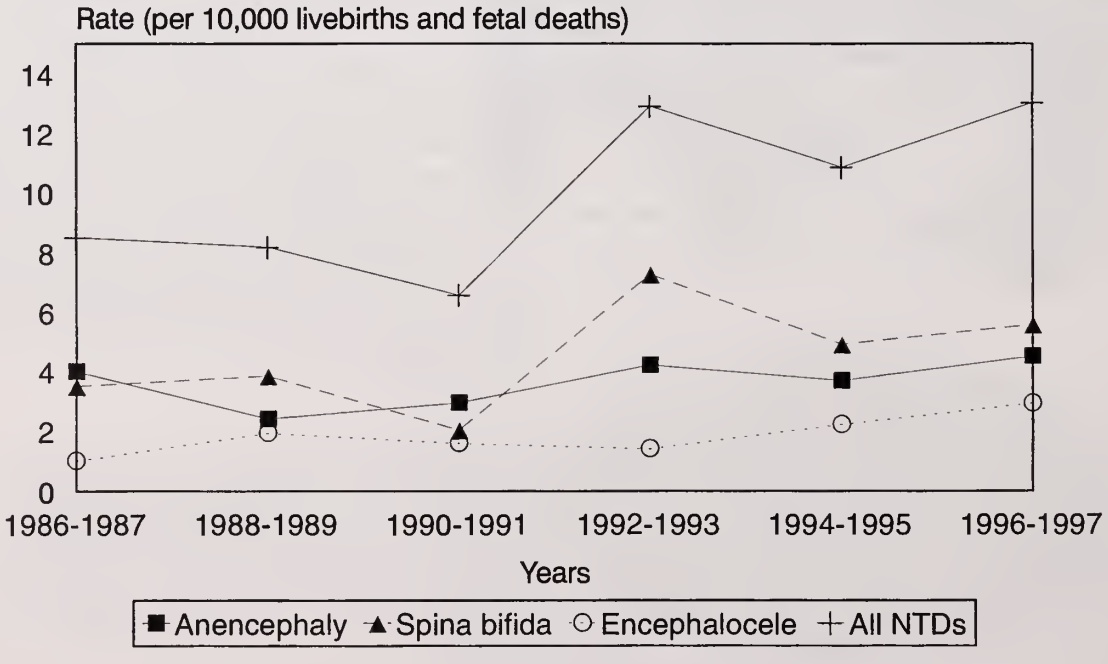
Results

Two hundred forty-five NTD-affected pregnancies were identified to have ended in Hawaii between 1986 and 1997, inclusive, for a prevalence of 9.95 (95 percent confidence interval (CI) 8.74-11.28) per 10,000 livebirths and fetal deaths. Of these cases, 89 (36.3 percent) were anencephaly, 111 (45.3 percent) spina bifida, and 45 (18.4 percent) encephalocele. The prevalence for anencephaly and spina bifida were similar (anencephaly 3.62, 95 percent CI 2.90-4.45; spina bifida 4.51, 95 percent CI 3.71-5.43), while the prevalence for encephalocele was significantly lower (1.83, 95 percent CI 1.33-2.45).

The rates of the various NTD diagnosis categories for each two-year interval of the study are presented in figure 1. The rates for all NTD categories increased over the twelve-year period of the study. This trend was not statistically significant for anencephaly (p=0.351), spina bifida (p=0.052), or encephalocele (p=0.138), but was statistically significant for all NTDs combined (p=0.012).

Table 1 shows the prevalence of NTDs by maternal race/ethnicity. The rate per 10,000 births for all NTDs combined was highest for Pacific Islanders (11.59), followed by whites (11.32), Far East Asians (9.81), and Filipinos (8.70). This pattern was not consistent for individual NTD diagnoses. Far East Asians had the highest

Figure 1.— Prevalence of neural tube defects (NTDs) by diagnosis, Hawaii 1986-1997



prevalence of anencephaly (4.31) while Pacific Islanders had the highest prevalence of spina bifida (5.87) and Filipinos of encephalocele (2.17). However, none of the differences between the racial/ethnic groups was statistically significant for any of the diagnostic categories.

Maternal age demonstrated no clear pattern in risk for spina bifida, encephalocele, or all NTDs combined (table 2) although the highest rates for spina bifida and encephalocele were among older women (35-39 and ≥40 age groups, respectively). Anencephaly risk tended to decline with increasing maternal age.

The numbers and rates of NTD-affected pregnancies by county of residence and by metropolitan Honolulu versus the rest of the state are exhibited in table 3 and table 4, respectively. The prevalence for the various diagnostic categories was similar for all counties except for Kauai County, which had a lower prevalence for anencephaly, spina bifida, and total NTDs. Due to the small number of cases, this decreased risk was not statistically significant. The rate was slightly higher for all diagnostic categories except encephalocele for residents of metropolitan Honolulu when compared to the rest of the state.

Table 5 shows the distribution of NTDs by infant/fetus sex. Females were disproportionally represented in all diagnostic categories. This disparity was statistically significant for spina bifida and total NTDs.

Discussion

The total prevalence for NTDs in Hawaii between 1986 and 1997 was 9.95 per 10,000 livebirths and fetal deaths. The prevalence rates for anencephaly and spina bifida were similar (3.62 and 4.51, respectively), while that for encephalocele was substantially lower (1.83). These rates are similar to those observed in other studies

Table 2.— Prevalence of neural tube defects (NTDs) by maternal age, Hawaii, 1986-1997.

Maternal age	No.	Rate*	95% CI**
Anencephaly			
≤19	13	5.65	3.01-9.65
20-24	16	2.64	1.51-4.29
25-29	33	5.03	3.46-7.06
30-34	22	4.24	2.66-6.42
35-39	5	2.12	0.69-4.96
≥40	0	0.00	0.00-8.36
Spina bifida			
≤19	12	5.21	2.69-9.10
20-24	26	4.29	2.80-6.28
25-29	30	4.57	3.08-6.52
30-34	23	4.43	2.81-6.65
35-39	18	7.65	4.53-12.08
≥40	2	4.53	0.55-16.37
Encephalocele			
≤19	3	1.30	0.27-3.81
20-24	12	1.98	1.02-3.46
25-29	17	2.59	1.51-4.14
30-34	7	1.35	0.54-2.78
35-39	3	1.27	0.26-3.72
≥40	3	6.80	1.40-19.86
Total NTDs			
≤19	28	12.16	8.08-17.57
20-24	54	8.91	6.69-11.62
25-29	80	12.18	9.66-15.16
30-34	52	10.03	7.49-13.15
35-39	26	11.05	7.22-16.18
≥40	5	11.34	3.68-26.43

*per 10,000 livebirths. **CI, confidence interval.

Table 1.— Prevalence of neural tube defects (NTDs) by maternal race/ethnicity, Hawaii, 1986-1997.

Race/ethnicity	No.	Rate*	95% CI**
Anencephaly			
white	23	3.67	2.32-5.50
Far East Asian	18	4.31	2.55-6.81
Pacific Islander	23	3.65	2.31-5.48
Filipino	12	2.90	1.50-5.06
Spina bifida			
white	35	5.58	3.89-7.76
Far East Asian	15	3.59	2.01-5.92
Pacific Islander	37	5.87	4.14-8.09
Filipino	15	3.62	2.03-5.98
Encephalocele			
white	13	2.07	1.10-3.54
Far East Asian	8	1.91	0.83-3.77
Pacific Islander	13	2.06	1.10-3.53
Filipino	9	2.17	0.99-4.13
Total NTDs			
white	71	11.32	8.84-14.28
Far East Asian	41	9.81	7.04-13.30
Pacific Islander	73	11.59	9.08-14.57
Filipino	36	8.70	6.09-12.04

*per 10,000 livebirths. **CI, confidence interval.

Table 3.— Prevalence of neural tube defects (NTDs) by county of residence, Hawaii, 1986-1997.

County	No.	Rate*	95% CI**
Anencephaly			
Honolulu	68	3.86	3.00-4.89
Hawaii	10	4.28	2.05-7.86
Maui	7	3.53	1.42-7.27
Kauai	2	1.99	0.24-7.17
Spina bifida			
Honolulu	79	4.48	3.55-5.58
Hawaii	11	4.70	2.35-8.41
Maui	12	6.05	3.13-10.57
Kauai	2	1.99	0.24-7.17
Encephalocele			
Honolulu	34	1.93	1.34-2.69
Hawaii	7	2.99	1.20-6.17
Maui	2	1.01	0.12-3.64
Kauai	2	1.99	0.24-7.17
Total NTDs			
Honolulu	181	10.27	8.83-11.87
Hawaii	28	11.97	7.96-17.30
Maui	21	10.59	6.56-16.18
Kauai	6	5.96	2.19-12.96

*per 10,000 livebirths. **CI, confidence interval.

Table 4.— Prevalence of neural tube defects (NTDs) by urbanity, Hawaii, 1986-1997.

Urbanity	No.	Rate*	95% CI**
Anencephaly			
Metro Honolulu	27	4.04	2.66-5.88
Rest of Hi	60	3.71	2.83-4.77
Spina bifida			
Metro Honolulu	33	4.94	3.40-6.94
Rest of Hi	71	4.39	3.43-5.53
Encephalocele			
Metro Honolulu	13	1.95	1.04-3.33
Rest of Hi	32	1.98	1.35-2.79
Total NTDs			
Metro Honolulu	73	10.93	8.57-13.74
Rest of Hi	163	10.07	8.59-11.74

*per 10,000 livebirths. **CI, confidence interval.

Table 5.— Prevalence of neural tube defects (NTDs) by gender, Hawaii, 1986-1997.

Gender	No.	Rate*	95% CI**
Anencephaly			
Male	26	2.21	1.44-3.23
Female	37	3.32	2.34-4.58
Spina bifida			
Male	39	3.31	2.35-4.53
Female	66	5.93	4.58-7.54
Encephalocele			
Male	17	1.44	0.84-2.31
Female	19	1.71	1.03-2.66
Total NTDs			
Male	82	6.96	5.54-8.64
Female	122	10.96	9.10-13.08

*per 10,000 livebirths. **CI, confidence interval.

conducted in the United States.[4,5,8]

In spite of the relatively small number of cases in a given year, the NTD prevalence demonstrated a general tendency to increase over the twelve-year period of the study. This trend was observed for all of the NTD diagnosis categories and was statistically significant for all NTDs combined. Among the specific NTD types, the increase was lowest for anencephaly (slope = 0.11), greatest for spina bifida (slope = 0.25) and intermediate for encephalocele (slope = 0.12).

This observation runs counter to other recent studies that have reported a decline in NTD prevalence in the United States.[4,5,11,12] A number of these studies did not include electively terminated NTDs in their analysis, while this one does. However, many of these other studies did include time periods prior to when the prenatal diagnosis and elective termination of NTD-affected pregnancies became common practice and/or were able to take into account the impact of elective termination to some degree.

Moreover, since 1992 various recommendations and other actions, including the fortification of "enriched" cereal grains in the U.S. in 1998, have been taken to increase knowledge and consumption of folic acid by women of childbearing age. As a result, NTD rates would be expected to decline since the beginning of the decade. However, neither a reduction in NTD prevalence specifically linked to folic acid use nor more than slight improvements in women's awareness and consumption of folic acid have been reported.[28]

The prevalence trend observed by this study is not believed to be based on biased ascertainment by the HBDP. Since its inception in 1989, the Program's catchment area has not changed, nor has the HBDP significantly modified its birth defects ascertainment procedures for livebirths. The data for years prior to 1989 were collected retrospectively, but the same procedures were applied to these years as for all others.

In 1992, the HBDP stopped systematically reviewing all medical records on fetal deaths less than 20 weeks gestation unless a fetal anomaly was suspected. However, if this change had had any impact on NTD rates it would have been expected to cause a decrease in trend and not an increase. Also, only four of the NTD cases had been identified among fetal deaths less than 20 weeks gestation prior to this change.

In 1993, the HBDP added elective terminations due to fetal anomalies less than 20 weeks gestation to its study criteria. (Prior to this time, only elective terminations 20 weeks or greater gestation were included.) As with livebirth cases, data for earlier years were ascertained retrospectively. Also, the increase in rates continued after this date. Moreover, since the HBDP uses a multiple source ascertainment system to identify cases, it is unlikely that NTD cases of any pregnancy outcome would have been missed by all sources.

A very small number of NTDs were identified by the HBDP prenatally, but the place and date of the end of the pregnancy could not be determined. Since the HBDP has access to all facilities in Hawaii where births and terminations due to fetal anomalies occur, most likely these prenatally-diagnosed pregnancies did not end in the state. Also, they were distributed throughout the twelve-year period of interest and their numbers would be too small to affect the observed trends appreciably.

Nor can the increase be accounted for by an increasing number of non-residents coming to the state to deliver NTD-affected pregnancies. Nine of the NTD cases in the registry occurred to non-residents. While seven of these cases occurred in the second half of the time period under study and only two occurred in the first half, the numbers are too small to account for the observed trend.

The observed increase in NTD prevalence in Hawaii could possibly result from some change in reporting practices by participating facilities, such as a change in defect coding. However, the multiple source system used by the HBDP would tend to minimize the impact of such a change. And to date the researchers have failed to positively identify a change in reporting practices.

The trend may represent a change in demographic patterns among Hawaii's population. However, the only identified change in demographics observed in 1986-1997was a shift toward births to older women. With the exception of anencephaly, this investigation failed to identify any trend in maternal age risk. And for anencephaly, the risk appeared to decrease with increasing maternal age.

Although some variation was observed in the prevalence of NTDs between the racial/ethnic groups examined, the differences were

minor and in no instance statistically significant. Other studies had observed the NTD prevalence to be lower in Asians than whites.[5,7,9] However, these studies grouped Asians together as a single group, thus blurring any differences between the various Asian race/ethnic groups, while this study subdivided this large category. In this investigation, whites did, in fact, demonstrate higher prevalence than Far East Asians for all NTD categories except anencephaly. Pacific Islanders had rates similar to whites, while, with the exception of encephalocele, rates for Filipinos were lower than for whites.

One limitation of this analysis is that a large proportion of the population of Hawaii is of mixed race/ethnicity. For the current analysis, the researchers assigned women of mixed race/ethnicity to a single racial/ethnic group, following the practices of the Hawaii Department of Health. In doing so, racial/ethnic differences may have been blurred. Unfortunately, the researchers cannot identify those cases of mixed-ancestry without reviewing the medical records again. Nor can comparable denominators be easily obtained from the Department of Health.

As mentioned above, anencephaly risk was found to decrease with increasing maternal age, an observation consistent with that of prior studies.[17] Also, this analysis did identify the highest prevalences for spina bifida and encephalocele among the oldest maternal age groups, something which other studies had found.[4,7,17] However, none of these observations was statistically significant.

Aside from encephalocele, NTD risk was much lower in Kauai County, although this observation was not statistically significant. The rates for all NTD categories were similar among the other three counties and similar between metropolitan Honolulu and the rest of the state.

Females were disproportionally more likely to have a NTD than males. The degree of this disparity was not consistent between the types of NTDs: the difference was highest for spina bifida and lowest for encephalocele. The greater prevalence among females observed in this study was in keeping with that found in the literature.[3,6,11,12,18]

The sex of forty-one (17 percent) of the NTD cases in the study could not be determined. Most of these were cases which were electively terminated and there was no mention of the fetus' sex in the medical record. However, sex was not found to affect the decision to electively terminate an NTD-affected pregnancy. Therefore, the cases of unknown sex are not thought to differ significantly from those cases of known sex and affect the sex ratio observed.

The main limitation of this study was its inability to determine a concrete explanation for the apparent increase in prevalence of NTDs in Hawaii between 1986 and 1997. Factors such as changes in case ascertainment over time were eliminated, and, with the possible exception of race/ethnicity, NTDs rates and patterns in Hawaii were similar to those in other parts of the U.S. for the demographic factors studied.

Due to the relatively small number of NTD cases observed by the HBDP each year (11-34), the observed trend may be spurious, in spite of the fact that it passed a test for statistical significance. Only further surveillance and the observation of a continued increase in prevalence would verify the results of this analysis. (And even if the increase does not appear to continue, this would not eliminate the possibility that the observed prevalence increase was true. The factor causing the increase could have ceased to operate or its impact mitigated by some other factor e.g., cereal grain fortification starting in 1998.)

The researchers were restricted in the variables they could examine in an effort to account for the secular increase to those which can be easily and consistently extracted from medical records. These records typically do not contain consistent and detailed information on environmental factors and others such as folic acid consumption, diet, and health behaviors which may affect NTD risk. Such information would perhaps be better obtained through a case-control interview study or some other research methodology. Considering the relatively small number of NTDs which occur each year, a case-control study would likely have to be conducted over a relatively long period of time.

The small number of cases likewise limited the analyses of the other demographic factors. Few of the observed differences in prevalence were found to be statistically significant. Only continued collection of cases over additional years would likely increase the statistical power of such analyses.

In conclusion, NTD rates and demographic factors such as race/ethnicity, maternal age, and sex were analyzed and found to be similar to that observed in other studies in the U.S. This study identified a general increase in the prevalence of NTDs in Hawaii between 1986 and 1997. No concrete explanation for the secular trend could be determined. Further investigation is suggested.

Acknowledgments

We wish to thank Dr. Laurence N. Kolonel, A. Michelle Weaver, and Amy. M. Yamamoto of the Hawaii Birth Defects Program, and the staff of the Office of Health Status Monitoring at the Hawaii State Department of Health.

References

1. Elwood JM, Little J, Elwood JH. *Epidemiology and Control of Neural Tube Defects.* Oxford, England: Oxford University Press; 1992.
2. Centers for Disease Control and Prevention. Economic costs of birth defects and cerebral palsy - United States, 1992. *MMWR Morb Mortal Wkly Rep* 1995;44:694-698.
3. Little J, Elwood JM. Epidemiology of neural tube defects. In: Kiely M, ed. *Reproductive and Perinatal Epidemiology.* Bocu Raton, Fla: CRC Press Inc; 1991:251-336.
4. Feldman JG, Stein SC, Klein RJ, Kohl S, Casey G. The prevalence of neural tube defects among ethnic groups in Brooklyn, New York. *J Chronic Dis* 1982;35:53-60.
5. Centers for Disease Control and Prevention. Spina bifida incidence at birth - United States, 1983-1990. *MMWR Morb Mortal Wkly Rep* 1992;41:497-500.
6. Canfield MA, Annegers JF, Brender JD, Cooper SP, Greenberg F. Hispanic origin and neural tube defects in Houston/Harris County, Texas. I. Descriptive epidemiology. *Am J Epidemiol* 1995;143:1-11.
7. Strassburg MA, Greenland S, Portigal L, Sever LE. A population-based case-control study of anencephalus and spina bifida in a low-risk area. *Dev Med Child Neurol* 1983;25:632-641.
8. Myrianthopoulos NC, Melnick M. Studies in neural tube defects. I. Epidemiologic and etiologic aspects. *Am J Med Genet* 1987;26:783-796.
9. Shaw GM, Jensvold NG, Wasserman CR, Lammer EJ. Epidemiologic characteristics of phenotypically distinct neural tube defects among 0.7 million California births, 1983-87. *Teratology* 1994;49:143-149.
10. Shaw GM, Velie EM, Wasserman CR. Risk for neural tube defect-affected pregnancies among women of Mexican descent and white women in California. *Am J Public Health* 1997;87:1467-1471.
11. Windham GC, Edmonds LD. Current trends in the incidence of neural tube defects. *Pediatrics* 1982;70:333-337.
12. Yen IH, Khoury MJ, Erickson JD, James LM, Waters GD, Berry RJ. The changing epidemiology of neural tube defect, United States, 1968-1989. *Am J Dis Child* 1992;146:857-861.
13. Centers for Disease Control and Prevention. Surveillance for anencephaly and spina bifida and the impact of prenatal diagnosis - United States, 1985-1994. *MMWR Morb Mortal Wkly Rep* 1995;44(SS-4):1-13.
14. Roberts HE, Moore CA, Cragan JD, Fernhoff PM, Khoury MJ. Impact of prenatal diagnosis on the birth prevalence of neural tube defects, Atlanta, 1990-1991. *Pediatrics* 1995; 96: 880-883.
15. Velie EM, Shaw GM. Impact of prenatal diagnosis and elective termination on prevalence and risk estimates of neural tube defects in California, 1989-1991. *Am J Epidemiol* 1996; 144: 473-479.
16. Hendricks KA, Simpson JS, Larsen RD. Neural tube defects along the Texas-Mexico border, 1993-1995. *Am J Epidemiol* 1999;149:1119-1127.
17. Janerich DT. Anencephaly and maternal age. *Am J Epidemiol* 1972;95:319-326.
18. Hay S. Sex difference in the incidence of certain congenital malformations: A review of the literature and some new data. *Teratology* 1971;4:277-286.
19. Shaw GM, Todoroff K, Velie EM, Lammer EJ. Maternal illness, including fever and medication use as risk factors for neural tube defects. *Teratology* 1998;57:1-7.
20. Kallen K. Maternal smoking, body mass index, and neural tube defects. *Am J Epidemiol* 1998;147:1103-1111.

continued on p. 341

Mammograms

Not just once, but for a lifetime



The National Cancer Institute has free booklets about breast cancer screening. For answers to your questions about cancer and to order these publications, call NCI's Cancer Information Service at **1-800-4-CANCER** (1-800-422-6237). Persons with TTY equipment, dial 1-800-332-8615.

Visit NCI's website for patients and the public at **http://rex.nci.nih.gov**

Alcohol Use in Hawaii

Earl S. Hishinuma PhD, Stephanie T. Nishimura MSW,
Robin H. Miyamoto PhD, and Ronald C. Johnson PhD

Abstract

This article provides a review of the existing literature on alcohol use in Hawaii (i.e., epidemiology, reasons for use, associated problems, and intervention) and offers clinical implications of the findings and suggestions for further areas of research. In general, Caucasians, Hawaiians, younger Filipinos, males, adolescents, young adults, and those with lower educational attainment were found to be at higher risk. Overall, Hawaii's rates were either comparable or lower than those for the entire United States. Factors associated with different rates of alcohol use included accessibility, ability to resist offers, parent use and sanctions, peer influence and use, attitudes and beliefs (e.g., perceived normal drinking, dangerousness), religious affiliation, social occasions, and school intervention. Variable rates and trends in help-seeking behaviors, treatment admissions, and treatment utilization reflected the socio-cultural diversity in Hawaii. Perceived effectiveness of different treatments were generally consistent across ethnic groups, but did not necessarily represent actual efficacy. There is a clear need for additional prevention, screening, and intervention programs in Hawaii, including socio-culturally appropriate ones, as well as a need for further research.

Introduction

There have been three previous reviews of alcohol use in Hawaii: Voss in 1961,[1] the Hawaii Alcoholism Research and Evaluation (HARE) Team in 1974-75,[2-4] and Ahern in 1985.[5] A common theme for these reviews was the need for additional research on epidemiology and intervention outcomes. Since these reviews were published, a considerable amount of research has been conducted. The purposes of this article are to provide a review of the existing literature on alcohol use in Hawaii (i.e., epidemiology, reasons for use, associated problems, and intervention), to offer clinical implications of the findings, and to suggest further areas of research. Emphasis will be placed on cross-cultural comparisons because of the need for such research in general,[6] the under-researched ethnically diverse groups in Hawaii,[7] and the accelerated growth of Asian/Pacific Islanders in comparison to other major ethnic groups in the United States (based on 1980 and 1990 census data).[8]

Correspondence to:
Earl S. Hishinuma, Ph.D., Assistant Professor, Department of Psychiatry,
and Associate Director,
Native Hawaiian Mental Health Research Development Program (NHMHRDP),
1356 Lusitana St., 4th Floor, John A. Burns School of Medicine,
University of Hawaii at Manoa, Honolulu, Hawaii, 96813;
E-mail is EARLHISH@AOL.COM

Method

Procedure

A research literature review primarily focusing on the psychosocial aspects of alcohol use in Hawaii was conducted based on *Medline* (national medical database), *PsychLit* (national database by the American Psychological Association), the resources at Hamilton Library at the University of Hawaii at Manoa (including the Hawaiian and Government Sections), and other independent sources (e.g., local and national epidemiologic studies published as reports, Hawaii State Department of Health reports).

Measures

Several measures of alcohol use were examined (e.g., lifetime use, drink in the past 30 days, daily drinking, age when first drink consumed). Acute or "binge" drinking is defined as having five or more alcoholic beverages on at least one occasion in the past 30 days. Chronic drinking is indicated by 60 or more alcoholic beverages in the past 30 days (or an average of 2 or more drinks per day for the past 30 days). Alcohol disorders (i.e., abuse and dependence) include a component of functional impairment. Much of the findings reported herein on alcohol disorders were based on the *Diagnostic and Statistical Manual of Mental Disorders, Third Ed.—Revised* (DSM-III-R).[9] DSM-III-R defines alcohol abuse as a maladaptive pattern of use indicated by (a) continued use despite knowledge of having a persistent or recurrent problem that is caused or exacerbated by alcohol use and/or (b) recurrent use in situations in which use is physically hazardous (e.g., driving while intoxicated), with some of these symptoms persisting for at least one month or occurred repeatedly over a longer period of time. A person who is diagnosed as abusing alcohol cannot have met the criteria for alcohol dependency. DSM-III-R defines alcohol dependency based on meeting at least three of nine criteria (e.g., persistent desire or unsuccessful effort to cut down use, frequent intoxication or withdrawal, activities given up, continued use, marked tolerance) for at least one month or repeatedly over a longer period of time.

Epidemiology

Ethnicity

On the basis of the literature review (see Table 1), a relatively robust finding was the higher proportions of alcohol use on the part of Caucasians and Hawaiians as compared to the major Asian ethnic groups in Hawaii (e.g., Japanese, Filipino, Chinese, Korean).[1,5,10-30] These trends appeared in the late 1950s and has persisted through the end of the 20th century. More recent epidemiologic data indicated that these ethnic differences start as early as the 6th grade (i.e., daily drinking, drink in the past 30 days, abuse, dependency).[25,28] The noteworthy exceptions to these patterns included: low rates of

Table 1. Prevalence Rates of Different Types of Alcohol Use and Associated Problems By Ethnic Group in Hawaii

Type of Alcohol Use	Studies (in chronological order)	Sample Descriptions	Ethnic Groups (% within ethnic group unless otherwise indicated) Caucasian	Chinese	Filipino	Hawaiian	Japanese	Other	Other Notes
Abstainers	Epidemiologic Study (1982)[10]	Adults	31%		53%	41%	59%		
	Wilson et al. (1978)[20], Schwitters et al. (1982)[31], & Johnson et al. (1985)[22]	>20 years of age, Oahu	4%	18%	31%	11%	17%		7% Hapa Haole[a]
Lifetime use	Voss (1960)[18]	Oahu	74%	58%	46%	62%	50%	62%	
	Bickerton (1975)[19]	Oahu	84%	67%	71%	91%	82%		
	Hawaii Substance Abuse Survey (1979)[10]	>11 years of age	91%	73%	53%	81%	78%	76%	87% Portuguese
	Youth Risk Behavior Surveillance (1997)[13,30]	High school	79%			80%		71%	68% Non-Hawaiian
	Hawaii Student Alcohol & Other Drug Use Survey (1998)[25]	6th grade	35%	28%	32%	35%	25%		
		8th grade	56%	37%	55%	59%	43%		
		10th grade	76%	55%	74%	80%	64%		
		12th grade	87%	70%	84%	82%	75%		
First drink before age 13	Youth Risk Behavior Surveillance (1997)[13,30]	Middle school				51%			43% Non-Hawaiian
		High school	36%			36%		30%	26% Non-Hawaiian
Daily drinking	Hawaii Student Alcohol & Other Drug Use Survey (1998)[25]	6th grade	1.1%	0.5%	0.9%	1.4%	0.1%		
		8th grade	3.5%	1.5%	1.9%	3.5%	1.3%		
		10th grade	3.9%	2.8%	2.9%	5.8%	2.3%		
		12th grade	3.7%	0.8%	2.8%	4.4%	1.7%		
Drink in past 30 days	Hawaii Substance Abuse Survey (1979)[10]	>11 years of age	78%	41%	36%	53%	45%	51%	53% Portuguese
	Youth Risk Behavior Surveillance (1997)[13,30]	Middle school				31%			23% Non-Hawaiian
		High school	49%			48%		38%	37% Non-Hawaiian
	Behavioral Risk Factor Surveillance (1997)[32]	Adults	67%					42%	
	Hawaii Student Alcohol & Other Drug Use Survey (1998)[25]	6th grade	15%	8%	13%	13%	7%		
		8th grade	32%	12%	24%	33%	15%		
		10th grade	47%	19%	34%	46%	29%		
		12th grade	55%	31%	46%	48%	36%		
Acute binge drinking (for those who drink)	Hawaii Behavioral Health Survey (1993)[24]	Adults	19%		7%	20%	12%	14%	
	Youth Risk Behavior Surveillance (1997)[13,30]	Middle school				16%			8% Non-Hawaiian
		High school	31%			33%		23%	22% Non-Hawaiian
	Behavioral Risk Factor Surveillance (1997)[32]	Adults	28%					35%	
Chronic drinking (for those who drink)	Hawaii Substance Abuse Survey (1979)[10]	>11 years of age	41%	2%	9%	19%	11%	18%	(row %)[b]
	Hawaii Behavioral Health Survey (1993)[24]	Adults	5%		4%	4%	5%	7%	
Any treatment needs (abuse or dependency)	Voss (1961)[1] (excessive drinking)	Adult males	5.5%	1.1%	8.6%	7.4%	5.8%		
	Hawaii Student Alcohol & Other Drug Use Survey (1998)[25]	6th grade	2.7%	0.3%	1.9%	2.3%	0.5%		
		8th grade	6.7%	1.3%	6.3%	10.9%	3.1%		
		10th grade	18.3%	6.7%	13.8%	20.1%	10.7%		
		12th grade	27.9%	12.6%	19.6%	26.5%	17.7%		
Alcohol treatment admissions	Hawaii Substance Abuse Survey (1979)[10]	Adults	70.8%	0.2%	2.3%	10.2%	3.7%	10.8%	(row %)[b]
	Hawaii State Department of Health (1983)[10]	Adults	18.0%	9.0%	10.0%	17.0%			
Drinking & driving	Hawaii Behavioral Health Survey (1993)[24]	Adults	1.0%		1.0%	3.0%	3.0%	2%	
Arrests for drinking under the influence (DUI)	Crime in Hawaii (1997)[26]	Juveniles	25.0%	0.0%	17.5%	27.5%	11.3%	18.7%	(row %)[b]
		Adults	43.6%	2.0%	9.9%	13.9%	10.9%	19.7%	(row %)[b]
Arrests for liquor-law violations	Crime in Hawaii (1997)[26]	Juveniles	32.0%	0.4%	10.2%	31.3%	5.9%	20.2%	(row %)[b]
		Adults	43.0%	2.0%	11.3%	17.6%	5.3%	20.8%	(row %)[b]

[a] Hapa Haole = one parent Caucasian, other parent either Japanese, Chinese, or Korean.

[b] These are row percentages (denominator based on only those arrested across ethnic groups), and therefore, should be interpreted in conjunction with State of Hawaii ethnic population figures: Total population of Hawaii = 1,148, 676: 22.1% Caucasian, 20.8% other mixed ancestry (not including part-Hawaiians), 20.6% Hawaiians/part-Hawaiians, 20.3% Japanese, 10.0% Filipino, 3.1% Chinese, 1.4% African American, 0.8% Korean, 0.8% Samoan or Tongan, and 0.1% Puerto Rican (Hawaii Health Surveillance Program; Department of Business, Economic Development & Tourism, State of Hawaii. *The State of Hawaii Data Book, 1997: A Statistical Abstract.* Honolulu, HI: Department of Business, Economic Development & Tourism, State of Hawaii; 1998).

drinking in the past 30 days for Hawaiian plantation workers on the Big Island (based on a 1959-60 study by Lemert[31]; however, 50% of the Hawaiians were Mormons[5]), highest rates of alcoholism for Filipino males based on 1950-1960 data (with alcoholism estimated from cirrhosis death rates),[1] relatively elevated rates for Filipino children and adolescents who were recently surveyed,[25] inconsistent results for Caucasians and acute drinking,[13,24,32] mixed results for chronic drinking in individuals 12 years of age or above[10,24,27,33-35] and higher alcoholic rates in the 1970s for a heterogeneous group of non-Hawaiians (which included Caucasians) as compared to Hawaiians.[36]

When examining different types of alcoholic beverages and adult drinkers, Le Marchand et al.[28] found Hawaiians consumed more beer than Caucasians, Japanese, Filipinos, and Chinese, while Caucasians drank more wine and hard liquor than the remaining ethnic groups. Finally, a higher percentage of Hawaiian adolescents tended to drink on school property than non-Hawaiians in middle school (Hawaiian = 6%, non-Hawaiian = 3%) continuing into the 9th-12th grades (Hawaiian = 14%, non-Hawaiian = 6%).[30]

Gender

Perhaps the most robust epidemiologic finding was the consistently higher rate of alcohol use by males as compared to females especially for more heavy alcohol consumption and alcohol use during adulthood[18,27] (i.e., first drink before age 13,[11-15] daily drinking for 6-10th graders,[25] at least one drink in the past 30 days for adults,[32] acute/binge drinking for adults,[32,37] chronic drinking for adults[27,32,37]). The very few exceptions to this included females having slightly higher rates for lifetime alcohol use for 8th graders and high schoolers,[11-15,25] and no consistent pattern for having had a drink in the past 30 days for high schoolers.[11-15,25]

Age

Another relatively consistent finding was the increase in alcohol use up to adolescence and young adulthood (i.e., first drink before age 13,[11-15] lifetime use,[11-15,25] daily drinking,[25] drink in past 30 days,[11-15,25] acute drinking,[11-15] abuse/dependency[25]), followed by a decline in use in later adulthood (i.e., drink in past 30 days,[26] acute drinking especially for females[32]). However, male rates of having had at least one drink in the past 30 days increased substantially from high school (41.5%) to adulthood (63.5%), whereas female rates remained approximately the same from high school (38.8%) to adulthood (38.5%).[11-15]

Educational Attainment

The relation between alcohol use and educational attainment varied as a function of the type of alcohol use. In general, there was a positive association between education and alcohol use for less severe drinking (i.e., the higher the education, the more individuals had at least one drink in the past 30 days).[24] In contrast, a negative association was found for more heavy alcohol use (i.e., the higher the education, the less individuals binged).[24]

Comparison to National Figures

In general, people of Hawaii use alcohol at approximately the same rate (i.e., first drink before age 13 for high schoolers,[13] lifetime for adolescents,[25] chronic drinking for adults[32]) or lower (i.e., lifetime for high schoolers,[11-15] drink in the past 30 days and acute drinking for high schoolers[13]) compared to the entire United States. However, when examining adult drinkers, a slightly higher rate of acute drinkers was found for those in Hawaii.[32] Regardless of these findings, Hawaii consumed more gallons of ethanol per year per person than the average for the entire United States[38] perhaps due to the impact of the tourist industry.[5] The consumption of beer and wine was higher for Hawaii, whereas the consumption of spirits (i.e., hard liquor) was higher for the entire United States.[38]

Reasons for Alcohol Use

There are many factors that determine the rates of alcohol use: (a) access, (b) internal attitudes and beliefs, and (c) external influences.

Access

When 6th, 8th, 10th, and 12th graders in Hawaii were asked how difficult it would be to get alcohol, 23.0%, 51.3%, 72.1%, and 77.4%, respectively, responded "fairly easy."[25] Not surprisingly, research on children and adolescents in Hawaii found a positive association between access to and use of alcohol (r = .20 to .45).[25] In examining 14 risk factors, the third highest correlation (r = .56) involved the availability of alcohol.[25]

Internal Attitudes and Beliefs

Several internal attitudes and beliefs (e.g., perceived causes, "normal" drinking, perceived dangerousness, and ability to resist) may be related to alcohol use. A fair degree of agreement has been found between different ethnic groups of undergraduates and adults in Hawaii in perceived causes of alcohol drinking,[16,22,39-43,44] with the exception that Caucasians tended to view problem drinking as due more to heredity and disease and less to social factors.[42] Regarding "normal" drinking, Johnson and his associates[16,22,39-42] found that for different ethnic groups in Hawaii, there was a strong relation between what an adult perceived to be normal drinking and the amount of alcohol consumed. Related to "normal" drinking, as children progressed through adolescence (6th to 12th grade), less severe drinking (e.g., try 1-2 drinks) was perceived to be less dangerous, while more severe drinking (e.g., 1-2 drinks nearly everyday) was perceived to be more harmful.[25] In addition, resistance to alcohol use was found to be related to age and who offers. The greatest amount of resistance to alcohol use was found for 6th graders based on self-reports.[25] By the 8th grade and above, the rates were comparable, although declining resistance was noted when offers were made by friends and strangers. However, overall, the highest rate of resistance was found for offers from strangers (42.9% for 12th graders) and the lowest rate of resistance was offers from parents (13.6% for 12th graders).[25]

External Influences

The 1998 Hawaii Student Alcohol and Drug Use Survey[25] found that of the 14 risk and 6 protective factors associated with alcohol drinking, externally based influences had the highest relations. The highest associated risks were friends' substance use (r = .69), perceived peer substance use (r = .67), and availability (r = .56, as reported above). The greatest associated protective factors were peer disapproval (r = -.45), parental substance use sanctions (r = -.30), and school prevention efforts (r = -.22). Ironically, these

factors may work counter to one another within the same family. On the one hand, (a) the greater the perceived family efforts in teaching the dangers of alcohol use and how to deal with peer pressure, the less the alcohol consumption of 6th to 12th graders in Hawaii and the higher the resistance to offers from friends and strangers, (b) only a very small minority of 6th to 12th graders felt that their friends would "think it was cool" to have five or more drinks once or twice every weekend or take one or two drinks nearly everyday, and (c) 6th to 12th graders indicated that their parents, teachers, and coaches were telling students not to use alcohol more so than their siblings, relatives, friends, or priests. On the other hand, (a) family efforts were perceived to decrease from the 6th to 12th grade, (b) the primary source of exposure of alcohol and drugs to adolescents were their own parents (e.g., 25.8% for 12th-grade respondents), (c) for 6th graders, parents (11.4%) and other relatives (12.9%) were most likely to offer alcohol, and (d) for 12th graders, friends (82.9%) were by far more likely to be the ones to offer alcohol.

For adults in Hawaii, social occasions influence alcohol use. For example, increased rates were found for Japanese and Chinese due to attending weddings or other "formal" occasions.[3] Similarly, the Epidemiologic Survey of 1984[27] found a positive association between alcohol use and social activities for Japanese and Filipinos. For Caucasians, a positive relation was found between alcohol use and visits by others to one's home, and between alcohol consumption and visits to friends' homes. For Hawaiians, an association was found between alcohol use and visits by others to one's home. However, the overall higher rates of alcohol consumption for Hawaiians was unlikely to be solely due to social drinking, given the lower rate of social drinking on the part of Hawaiians (36.6%) as compared to the State of Hawaii (67.5%).[45-46]

Given the diverse religious affiliations that parallel the multiethnic people of Hawaii, religion may also play a role in the rate of alcohol consumption. Clark, Beeghley, and Cochran found that the influence of people's religious groups was more than that of their class.[47] Persons of Chinese, Japanese, and Korean ancestry make up well over one-fifth of the population of Hawaii and frequently maintain affiliation with Buddhist religion and Confucian philosophy. Although these affiliations may not directly influence alcohol use,[48] they probably are associated with a kind of social conservatism that results in a low rate of alcohol consumption, thus reducing the state-wide rates described previously. Protestant, as compared with Catholic, affiliation was associated with no or low use in North America,[49] Scotland,[50] and Korea (females only).[48] Clark et al. found the Protestant-Catholic difference resulted largely from the low rate of alcohol use among proscriptive (conservative) Protestant religious groups. Persons of Hawaiian ancestry (even when involved with traditional Hawaiian religious beliefs) were far more often Protestant than Catholic, probably because the royalty were Congregationalists until the time of King Kamehameha IV, when they became Episcopalians. The Hawaiians' Protestantism (though liberal) might be expected to result in lower rates of alcohol consumption, but this did not appear to be the case or was only one factor influencing alcohol use rates. One worthy note regards the substantial number of persons of Hawaiian ancestry who belong to the Latter Day Saints (Mormon) religion. On the basis of personal conversations with persons who joined the Latter Day Saints as well as findings from the late 1950s,[5,31] it seems highly probable that many who joined (given the strong Mormon prohibitions) did so in order to support their own desire to avoid problems having to do with excessive alcohol use.

Associated Problems

An important consideration regarding alcohol use is its adverse effects on the user (e.g., lower intellectual functioning, increased perceived problems, decreased perceived future educational attainment, comorbid drug abuse, comorbid mental illness, "flushing" [vasodilation of blood vessels in the skin], increased adolescent sexual activity, driving under the influence, liquor-law violations/arrests, suicide, withdrawal, cirrhosis, other physiological outcomes including cancer and mortality), his or her social relations (e.g., birth defects, child maltreatment on the part of parents, family discord, marital dissatisfaction, assaults), and society (e.g., poor work functioning, motor-vehicle violations, corrections facilities, rehabilitation services, societal costs).[1-3,10-15,20-21,24-25,27-28,32,37,43,45-46,51-71]

Ethnicity

Ethnic differences regarding associated problems have generally reflected the disproportionately higher rates of alcohol use for Caucasians and/or Hawaiians in comparison to the major Asian groups in Hawaii. These problems included alcohol-related cognitive and physical symptoms,[27] parents who were alcoholic (Hawaiians),[65] provision of perinatal health services to women,[59] alcohol and drug use by adults,[27] comorbid mental illness (Caucasians),[1] drinking and driving,[24] driving under the influence (see Table 1),[51-53] liquor-law violations (see Table 1),[53] and alcohol-related causes of death (homicide [Hawaiians], motor-vehicle accidents [Hawaiians], suicide [Hawaiians], cirrhosis [Caucasians]).[66]

The only exceptions to the greater levels of associated problems for Caucasians and Hawaiians were as follows: (a) highest to lowest rates of fetal alcohol syndrome per 10,000 births = Vietnamese (14.4), Native American Indian (11.5), Hispanic (11.0), Hawaiian (7.1), and Caucasian (4.2), with all other ethnic groups equal to or below 3.0,[60] (b) alcohol use higher than average for Filipino, Samoan, Tongan, and Pacific-Islander inmates (excluding Hawaiians) for those incarcerated in the State of Hawaii correctional facilities,[68] (c) highest to lowest rates of heavy polydrug use for the incarcerated = 57% Hispanics, 48% Hawaiians, 48% Asians, 39% African American, 36% others, 33% Caucasians, 32% Filipinos, and 17% Pacific Islanders,[68] and (d) rates of cirrhosis of the liver per 100,000 people = 8,590 Filipino males (highest), 7,410 Hawaiian males, 5,790 Japanese males, 5,530 Caucasians males, 1,100 Chinese males; and 1,850 Caucasian females (which was the highest for females other than "other").[1]

Intervention

Alcohol Abuse/Dependency and Treatment Needs

The prevalence of alcohol abuse and dependency has been equated to alcohol treatment needs.[25] The 1995 Hawaii Adult Household Survey of Substance Use and Treatment Needs[72] used DSM-III-R criteria and found alcohol abuse/dependency to have the highest rates as compared to other drugs (i.e., marijuana, cocaine, hallucinogens, heroin, amphetamines). Of those surveyed, 6.4% needed treatment for alcohol only, 1.4% for both alcohol and other drugs,

and 8.9% for alcohol and/or other drugs. Similar results were obtained by Kroliczak et al.[73] However, much higher rates were found for 10th and 12th graders based on the 1998 Hawaii Student Alcohol and Other Drug Use Survey (see Table 1), with relatively escalated prevalences for Caucasians and Hawaiians.[25]

Help Seeking, Treatment Admissions, and Treatment Utilization

Based on the 1996 Hawaii Student Alcohol and Other Drug Use Survey,[74] the four most common reasons for not seeking help were: (a) no idea where to go for assistance, (b) could solve problems by oneself, (c) fear that the teacher or parent would find out, and (d) get in trouble with the law. For adults, Kroliczak et al. found that lack of transportation was the most frequent reason given as an obstacle for substance use treatment.[73]

Actual admission records also shed light on the problems associated with alcohol use. In the early 1970s, the data indicated that for those who were in treatment programs, the majority (2/3 to 4/5) were males as compared to females, and most (1/2 to 9/10 depending on the type of treatment with the exception of seeing clergy) were Caucasian (as opposed to Hawaiian, Japanese, Filipino, Chinese, and other).[2,4,75-76] Despite Hawaiians constituting 17.2% of the population of Hawaii at the time, relatively low rates of treatment utilization were evidenced (e.g., 8.0% for detoxification[75]). Similar results were found based on the 1979 Hawaii Substance Abuse Survey (as cited in E Ola Mau[10]), where Caucasians were over-represented in alcohol treatment facilities and the other ethnic groups were under-represented (see Table 1). However, figures from 1983 (by the Hawaii State Department of Health, as reported in E Ola Mau[10]) indicated a decrease in the treatment rate for Caucasians, but an increase for Hawaiians. More recent data from the Hawaii State Department of Health (1992-97)[77] supported the higher admissions rate for Hawaiians (as cited in the Native Hawaiian Data Book, 1998[45]). Admissions to substance abuse treatment programs (with purchase of service contracts from the Alcohol & Drug Abuse Division) across a six-year period indicated that approximately one-third of the clients were Hawaiian (e.g., 1,992 of 5,258 cases = 37.7%). It must be noted, however, that treatment access and utilization may be at least partially determined by socioeconomic and cultural variables (e.g., Asians sought less help from institutions,[5] Hawaiians sought more help from friends and family members[5] and sought less help from professionals,[27] Caucasians had smaller extended families).

Efficacy

Related to help-seeking behaviors and treatment utilization is the perceived and actual effectiveness of alcohol programs. Based on the 1998 Hawaii Student Alcohol and Drug Use Survey, the majority of 8th, 10th, and 12th graders felt that the schools' efforts regarding alcohol/drug education and treatment programs were not good or not excellent.[25] In another study, the five most highly rated treatments for Hawaiians (most of whom were adults) were: (a) positive thinking, (b) Alcoholics Anonymous, (c) willpower, (d) residential treatment, and (e) mental health professionals.[43] "Traditional healer" was consistently rated low. Research on undergraduate college students in Hawaii regarding their beliefs in alcohol treatment effectiveness found a fair degree of agreement between ethnic groups.[42] However, contrary to the research on the effectiveness of various treatments, the undergraduates believed that Alcoholics Anonymous and residential treatment were the most effective treatments. According to Johnson based on a review,[78] "Maturing out, family involvement, religious involvement and learning useful skills seem to be the kinds of treatment that have worked for Hawaiians," p.15 with Alcoholics Anonymous probably being less effective. Alternative activities such as boating, sailing, literacy, and cultural involvement may also serve to decrease alcohol use.[78]

Conclusions

The present article summarized the research literature on alcohol use in Hawaii by discussing epidemiology, reasons for alcohol use, associated problems, and interventions, with particular focus on ethnic similarities and differences. *In general*, the following points can be reasonably made on the basis of the review:

- Particular groups tended to have higher rates and more associated problems: Caucasians, Hawaiians, males, adolescents, and young adults.
- Variable results were found for Filipinos; greater alcohol use was suggested for younger Filipinos than older ones. However, this may have been due to either differences in developmental stages or discrepancies in generational attitudes and behaviors.
- Ethnic minority groups (e.g., African American, Hispanic, Native American Indian, Samoan, Tongan, Vietnamese) in contrast to the major ancestries in Hawaii (i.e., Caucasian, Filipino, Japanese, Hawaiian) may have been at even greater risk for some of the types of alcohol use.
- Higher educational attainment was associated with higher levels of less-severe drinking, whereas lower educational attainment was related to more heavy forms of alcohol consumption.
- The people of Hawaii had either lower or comparable rates of alcohol use as compared to the United States. Although higher levels of overall alcohol consumption was found, this was likely related to alcohol use by tourists.
- Access and availability to alcohol were risk factors, as expected, with a dramatic increase in accessibility from the 6th to 10th grades, and with parents, relatives, and friends the most likely to offer alcohol to children and adolescents than other social-network groups.
- Other associated risks included perceived "normal" versus dangerous drinking, peer/friends' substance use, and social occasions (e.g., weddings, home visits).
- Protective factors included ability to resist offers, peer disapproval, parent substance use sanctions, school prevention efforts, and religious affiliation.
- The reasons for lack of help-seeking behaviors varied as a function of developmental age and perhaps ethnic differences.
- Treatment admissions and utilization rates steadily increased across the past two to three decades for Hawaiians, such that Hawaiians are now over-represented in such treatment programs.
- Although there appeared to be a fair degree of agreement on the perceived efficacy of alcohol treatments, the perceived effectiveness was not necessarily consistent with the known efficacy of common programs (e.g., Alcoholics Anonymous).

Some caution is warranted in interpreting the research findings. The studies cited were not conducted with a common research agenda (heterogeneous samples and data sets from different periods of time examining many alcohol-related topics). However, the accumulation of knowledge about alcohol use in Hawaii has progressed to a point where further statements can be made, especially regarding clinical implications and future research.

Clinical Implications and Program Needs

There is a clear need for additional alcohol prevention, screening, and intervention programs in Hawaii. In addition to obvious environments for prevention programs (e.g., schools), health professionals can play important roles. Prevention programs should begin early in childhood (prior to the 6th grade), pay particular attention to at-risk groups (as outlined above), and strongly consider family, social, and cultural influences. Pediatricians and nurses are particularly at the "front line" of prevention as are physicians who treat adults (especially parents) with alcohol-related problems. Issues concerning accessibility, attitudes (e.g., normal drinking, stigma), beliefs (e.g., dangerousness, religion), source of offers, resistance to offers, and alternative socially productive activities are highly pertinent.

Effective screening and identification are also critical in light of the prevalences from community samples. Although screenings should occur on various fronts (e.g., physicians' offices, schools), greater community outreach efforts may be warranted because of the varied rates of help-seeking behaviors on the part of people in Hawaii. This may include community-based educational programs to decrease the stigma associated with alcohol-related illnesses[1] and to increase awareness of the availability of cost-effective screening and treatment programs.

Treatment programs (e.g., outpatient, partial hospitalization, medically monitored/managed inpatient care,[63] residential) should be tailored to the individualized needs of each person. In addition to the alcohol use per se, treatment considerations should include other associated issues and problems such as comorbid mental illness,[68] polysubstance abuse (e.g., crystal methamphetamine[68]), social support, and so on.

As a general statement, the consistent differences found between socio-cultural groups suggest the need for socio-culturally appropriate preventions, screening programs, and treatment interventions.[29,78] This is particularly important given the variable rates of helping-seeking behaviors, admissions, and treatment utilization.

Further Research

Despite the progress made in our knowledge related to alcohol use, research is needed in virtually all areas. The following domains have been particularly neglected:

- Etiology of alcohol use of risk groups, including differentiating between biological, educational, social, cultural, and economic determinants.[78]
- Individuals of mixed (40% of Hawaii's population) and less-frequently represented ancestries (e.g., African American, Hispanic, Native American Indian, Alaska Native, Chinese, Korean, Vietnamese, Samoan, Tongan).[5]
- Developmental and longitudinal approach (e.g., child, adolescent, and adult drinking; treatment progress and recidivism).
- Efficacy of interventions that incorporate relevant socio-cultural (e.g., attitudes, beliefs, cultural sensitivity, social support, community norms) and alcohol-related issues (e.g., polysubstance use, comorbidity, etc.).[1,68]

Acknowledgement

This article was supported by RCMI Supplement NIH Grant No. RR0361-06S1, NIMH Grant No. 1 R24 MH5015-01, and the Queen Emma Foundation. Special appreciation is expressed to Dr. Deborah A. Goebert for her helpful comments on previous drafts. The authors would also like to thank the researchers and administrators of the NHMHRDP.

References

1. Voss HL. *Alcoholism in Hawaii.* Honolulu, HI: Economic Research Center, University of Hawaii at Manoa; 1961.
2. Burtness KH, Chouljian GJ, Yamakawa JM, Lam DJ. *The HARE Report: Alcoholism in Hawaii.* Honolulu, HI: Hawaii Alcoholism Research & Evaluation; 1974.
3. Burtness KH, Chouljian GJ, Yamakawa JM, Lam DJ. *The HARE Report: Alcoholism in Hawaii, Supplement I.* Honolulu, HI: Hawaii Alcoholism Research & Evaluation; 1975.
4. State of Hawaii. *The Hawaii State Plan on Alcoholism.* Honolulu, HI: State of Hawaii; 1974-75.
5. Ahern FM. *Alcohol Use and Abuse Among Four Ethnic Groups in Hawaii: Native Hawaiians, Japanese, Filipinos, and Caucasians.* Paper presented at the Epidemiology of Alcohol Use and Abuse Among U.S. Minorities Conference, National Institute of Alcohol Abuse & Alcoholism, Bethesda, MD; 1985, September. [Printed: Ahern FM. Alcohol use and abuse among four ethnic groups in Hawaii: Native Hawaiians, Japanese, Filipinos, and Caucasians. In: Spiegler D, Tate D, Aitken S, Christian C, eds. *Alcohol use among U.S. ethnic minorities: Proceedings of a conference on the epidemiology of alcohol use and abuse among ethnic minority groups.* Rockville, MD: National Institute of Alcohol Use and Alcoholism; 1989:315-328.]
6. Matsunaga S. The federal role in research, treatment, and prevention of alcoholism. *Am Psychologist.* 1983,38(10):1111-1115.
7. Spiegler D, Tate D, Aitken S, Christian C, eds. *Alcohol Use Among U.S. Ethnic Minorities: Proceedings of a Conference on the Epidemiology of Alcohol Use and Abuse Among Ethnic Minority Groups.* Rockville, MD: National Institute of Alcohol Abuse & Alcoholism (NIAAA); 1989.
8. Barringer H, Gardner RW, Levin MJ. *Asians and Pacific Islanders in the United States.* New York: Russell Sage Foundation; 1993.
9. American Psychiatric Association (APA). *Diagnostic and Statistical Manual of Mental Disorders III Revised (DSM-III- R).* Washington, DC: APA; 1987.
10. Native Hawaiian Health Research Consortium. *E Ola Mau: The Native Hawaiian Health Needs Study: Mental Health Task Force Report.* Honolulu, HI: Alu Like, Inc.; 1985.
11. Centers for Disease Control & Prevention (CDC). *Youth Risk Behavior Surveillance United States, 1993.* Atlanta, GA: CDC, U.S. Department of Health & Human Services; 1993.
12. Centers for Disease Control & Prevention (CDC). *Youth Risk Behavior Surveillance United States, 1995.* Atlanta, GA: CDC, U.S. Department of Health & Human Services; 1995.
13. Centers for Disease Control & Prevention (CDC). *Youth Risk Behavior Surveillance United States, 1997.* Atlanta, GA: CDC, U.S. Department of Health & Human Services; 1997.
14. Office of Instructional Services/General Education Branch, Department of Education, State of Hawaii. *1993 Hawaii Youth Risk Behavior Survey Report.* Honolulu, HI: Office of Instructional Services/General Education Branch, Department of Education, State of Hawaii; 1994.
15. Office of Instructional Services/General Education Branch, Department of Education, State of Hawaii. *1995 Hawaii Youth Risk Behavior Survey Report.* Honolulu, HI: Office of Instructional Services/General Education Branch, Department of Education, State of Hawaii; 1996.
16. Danko GP, Johnson RC, Nagoshi CT, Yuen SHL, Gidley JE, Ahn M. Judgments of normal and problem alcohol use as related to reported alcohol consumption. *Alcoholism: Clinical & Exp Res. 1988,12(6):760-768.*
17. Kono H, Towle LH, Harford TC. *Alcohol Consumption Patterns and Related Problems in the United States and Japan: Summary Report of a Joint United States - Japan Alcohol Epidemiological Project.* Rockville, MD: National Institute of Alcohol Abuse & Alcoholism (NIAAA), National Institutes of Health (NIH); 1991.
18. Voss E. *An Analysis of Alcohol Consumption Pattern on Oahu.* Honolulu, HI: Economic Research Center of the University of Hawaii; 1961.
19. Bickerton YJ. *Alcoholism and Ethnicity in Hawaii.* Unpublished dissertation, University of Sussex; 1975.
20. Wilson JR, McClearn GE, Johnson RC. Ethnic variation in use and effects of alcohol. *Drug & Alcohol Dependence.* 1978,3(2):147-151.
21. Schwitters SY, Johnson RC, Wilson JR, McClearn GE. Ethnicity and alcohol. *Hawaii Medical J.* 1982,41(2):60- 63.22.
22. Johnson RC, Schwitters SY, Wilson JR, Nagoshi CT, McClearn GE. A cross-ethnic comparison of reasons given for using alcohol, not using alcohol or ceasing to use alcohol. *J of Studies on Alcohol. 1985,46(4):283-288.*
23. Weatbherspoon AJ, Danko GP, Johnson RC. Alcohol consumption and use norms among Chinese-American and Korean-Americans. *J of Studies on Alcohol.* 1994,55:203-206.
24. Department of Health, State of Hawaii. *Hawaii Behavioral Health Survey: 1986-93.* Honolulu, HI: Alcohol & Drug Abuse Division (ADAD), Department of Health, State of Hawaii; 1986-93.
25. Klingle R., & Miller, M. D. *The 1998 Hawaii Student Alcohol and Drug Use Survey (1991-1998): Hawaii Adolescent Treatment Needs Assessment.* Honolulu, HI: Speech Department, University of Hawaii at Manoa, and Alcohol & Drug Abuse Division, Department of Health, State of Hawaii.
26. Bureau of Justice Statistics, U.S. Department of Justice. *Crime in the U.S.,1996.* Washington, DC: Bureau of Justice Statistics, U.S. Department of Justice; 1997.

27. Murakami SR. An epidemiological survey of alcohol, drug, and mental health problems in Hawaii : a comparison of four ethnic groups. In: Spiegler D, Tate D, Aitken S, Christian C, eds. *Alcohol Use Among U.S. Ethnic Minorities: Proceedings of a Conference on the Epidemiology of Alcohol Use and Abuse Among Ethnic Minority Groups.* Rockville, MD: National Institute of Alcohol Abuse & Alcoholism (NIAAA); 1989:343-355.
28. Le Marchand L, Kolonel LN, Yoshizawa CN. Alcohol consumption patterns among the five major ethnic groups in Hawaii: Correlations with incidence of esophageal and oropharyngeal cancer. In: Spiegler D, Tate D, Aitken S, Christian C, eds. *Alcohol Use Among U.S. Ethnic Minorities: Proceedings of a Conference on the Epidemiology of Alcohol Use and Abuse Among Ethnic Minority Groups.* Rockville, MD: National Institute of Alcohol Abuse & Alcoholism (NIAAA); 1989:355-372.
29. Wedge B, Abe S. Racial incidence of mental disease in Hawaii . *Hawaii Med J.* 1949,8:337-338.
30. Lai MK, Saka, SM. *Hawaiian Students Compared with Non-Hawaiian Students on the 1997 Hawaii Youth Risk Behavior Survey.* Honolulu, HI: Curriculum Development & Research Group, University of Hawaii at Manoa; 1998.
31. Lemert, E. Drinking in Hawaiian plantation society. *Quar J of Studies on Alcohol.* 1964,25:689-713.
32. Centers for Disease Control & Prevention. *Behavioral Risk Factor Surveillance System, 1993, 1995, 1997.* Atlanta, GA: CDC, U.S. Department of Health & Human Services; 1993, 1995, 1997.
33. Johnson DB, Oyama N, Le Marchand L. Papa Ola Lokahi Hawaiian health update: Mortality, morbidity and behavioral risks. *Pacific Health Dialog.* 1998,5(2):297-314.
34. Office of Hawaiian Affairs (OHA). *Native Hawaiian Data Book, 1996.* Honolulu, HI: OHA; 1996.
35. Chung CS, Tash E, Raymond J, Yasunobu C, Lew R. Health risk behaviors and ethnicity in Hawaii. *Int J of Epidemiology.* 1990,19(4):1011- 1018.
36. Alu Like, Inc. *The Mental Health of Native Hawaiians.* Honolulu, HI: Alu Like, Inc.; 1981.
37. Chung CS, Villafuerte A, Wood DW. Trends in prevalences of behavioral risk factors: Recent Hawaiian experience. *Am J Public Health.* 1992,82(11):1544-1546.
38. Williams GD, Stinson FS, Sanchez LL, Dufour MC. *Apparent Per Capita Alcohol Consumption: National, State, and Regional Trends, 1977-95.* Bethesda, MD: National Institute of Alcohol Abuse & Alcoholism (NIAAA), National Institutes of Health (NIH); 1997.
39. Johnson RC, Nagoshi CT, Ahern FM, Wilson JR, Yuen SHL. Cultural factors as explanations for ethnic group differences in alcohol use in Hawaii. *J of Psychoactive Drugs.* 1987,19(1):67-75.
40. Johnson RC, Nagoshi CT. Asians, Asian-Americans, and alcohol. *J of Psychoactive Drugs.* 1989,22:45-52.
41. Johnson RC, Nagoshi CT, Danko GP, Honbo KAM, Chau LL. Familial transmission of alcohol use norms and expectancies and reported alcohol use. *Alcoholism: Clinical & Exp Res.* 1990,14(2):216-220.
42. Peralta CD, Danko GP, Johnson RC. Group similarities in beliefs concerning causes of alcohol problems and the effectiveness of means of overcoming problem alcohol use. *Alcoholism: Clinical & Exp Res.* 1995,19(4):964-968.
43. Native Hawaiian Drug Free Schools & Communities Program. *A Study on the Perception of Alcohol Use Among Native Hawaiian Adults.* Honolulu, HI: Kamehameha Schools/Bernice Pauahi Bishop Estate; 1998.
44. McLaughlin DG, Raymond JS, Murakami SR, Goebert D. Drug use among Asian Americans in Hawaii. *J of Psychoactive Drugs.* 1987,19(1):85-94.
45. Office of Hawaiian Affairs (OHA). *Native Hawaiian Data Book, 1998.* Honolulu, HI: OHA; 1998.
46. Department of Health, State of Hawaii. *Hawaii Behavioral Health Survey: 1991, Executive Summary.* Honolulu, HI: Alcohol & Drug Abuse Division (ADAD), Department of Health, State of Hawaii; 1992.
47. Clark L, Beeghley L, Cochran J. Religiosity, social class, and alcohol use: An application of reference group theory. *Sociological Perspectives.* 1990,33:201-218.
48. Park JY, Danko GP, Wong SYC, Weatherspoon AJ, Johnson RC. Religious affiliation, religious involvement, and alcohol in Korea. *Cultural Diversity and Mental Health.* 1998,4(4):291-296.
49. Bock EW, Cochran J & Beeghley L. Moral messages: The relative influence of denomination on the religiosity-alcohol relationship. *Sociological Quarterly.* 1987,28:86-105.
50. Mullen K, Blaxter M, Dyer S. Religion and attitudes toward alcohol use in the western isles. *Drug and Alcohol Dependency.* 1986,18:51-72.
51. Department of the Attorney General (DAG), State of Hawaii. *Crime in Hawaii, 1995.* Honolulu, HI: DAG, State of Hawaii; 1996.
52. Department of the Attorney General (DAG), State of Hawaii. *Crime in Hawaii, 1996.* Honolulu, HI: DAG, State of Hawaii; 1997.
53. Department of the Attorney General (DAG), State of Hawaii . *Crime in Hawaii, 1997.* Honolulu, HI: DAG, State of Hawai i; 1998.
54. National Institute of Drug Abuse (NIDA) & National Institute of Alcohol Abuse & Alcoholism (NIAAA). *Executive Summary: The Economic Costs of Alcohol and Drug Abuse in the United States 1992.* Washington, DC: NIDA, NIAAA, NIH; 1998.
55. National Highway Traffic Safety Administration (NHTSA). *Traffic Safety Facts, 1996.* Washington, DC: NHTSA, U.S. Department of Transportation; 1997.
56. National Institute of Alcohol Abuse & Alcoholism (NIAAA). *State Trends in Alcohol-Related Mortality, 1979-92.* Bethesda, MD: NIAAA, NIH; 1996.
57. Department of Health, State of Hawaii. *Perinatal Section Annual Report: July 1, 1992 through June 30, 1993.* Honolulu, HI: Perinatal Health Services Section, Maternal & Child Health Branch, Department of Health, State of Hawaii; 1993.
58. Department of Health, State of Hawaii. *PPWI Final Report.* Honolulu, HI: Department of Health, State of Hawaii; 1995.
59. Department of Health*, State of Hawaii. *Perinatal Services Annual Report: Calendar Year 1992.* Honolulu, HI: Perinatal Health Services Section, Maternal & Child Health Branch, Department of Health, State of Hawaii; 1992.
60. Department of Health, State of Hawaii. *Hawaii Birth Delects Monitoring Program: Surveillance Report #5 on Birth Delects in Hawaii: January 1, 1987 to December 31, 1996.* Honolulu, HI: Department of Health, State of Hawaii; 1996.
61. Kim K. *The Lie Factor in Traffic Safety: Comparison of Police and Hospital Reporting of Seat Belt and Alcohol Use in Hawaii*. Paper presented at the 78th Annual Meeting of the Transportation Research Board, Washington, DC; 1999.
62. American Psychiatric Association (APA). *Diagnostic and Statistical Manual of Mental Disorders IV (DSM-IV).* Washington, DC: APA; 1994.
63. Kroliczak A., Nothaft A, Larsen MD. *Executive Summary: Hawaii Study of Substance Abuse and Need for Treatment Among New Arrestees.* Honolulu, HI: Hawaii Department of Health, Alcohol & Drug Abuse Division; 1996.
64. Department of Health, State of Hawaii. *Blind Study of Substance Abuse and Need for Treatment Among Women of Childbearing Age in Hawaii.* Honolulu, HI: Department of Health, State of Hawaii; 1996.
65. Werner EE. Resilient offspring of alcoholics: A longitudinal study from birth to age 18. *J Studies Alcohol.* 1986,47(1):34-40.
66. Stinson FS. *Use of Alcohol by Native Hawaiians.* Washington, DC: Unpublished manuscript, CRS, Inc.; 1984.
67. Patrick V, Hishinuma ES, Pehm J. Trends across two time periods in the diagnosis of sub-stance abuse comorbidity at the Hawaii State Hospital. *Hawaii Medical Journal.* 1999,58(12):335-340.
68. Chandler SM, Kassebaum G. *Alochol-Drug Use Problems Among Hawaii s Adult Prison Inmates: A Survey in Eight Correctional Facilities, 1990-91.* Honolulu, HI: Department of Public Safety, State of Hawaii; 1991.
69. Le Marchand L, Wilkens LR, Kolonel LN, Hankin JH, & Lyu LC. Associations of sedentary lifestyle, obesity, smoking, alcohol use, and diabetes with the risk of colorectal cancer. *Cancer Res.* 1997,57(21):4787-4794.
70. Chyou PH, Burchfiel CM, Yano K, Sharp DS, Rodriguez BL, Curb JD, Nomura AM. Obesity, alcohol consumption, smoking, and mortality. *Ann Epidemiol.* 1997,7(4),311-317.
71. Szuster RR, Schanbacher BL, McCann SC. Characteristics of psychiatric emergency room patients with alcohol- or drug-induced disorders. *Hosp Community Psychiatry.* 1990,41(12):1342-1345.
72. Department of Health, State of Hawaii. *1995 Hawaii Adult Household Survey of Substance Use and Treatment Needs.* Honolulu, HI: Alcohol & Drug Abuse Division (ADAD), Department of Health, State of Hawaii; 1996.
73. Kroliczak A, Nothaft A, Larsen MD. *Executive Summary: Hawaii 1995 Adult Household Survey of Substance Use and Treatment Needs.* Honolulu, HI: Hawaii Department of Health, Alcohol & Drug Abuse Division; 1996.
74. Department of Health, State of Hawaii. *1996 Hawaii Student Alcohol and Other Drug Use Survey.* Honolulu, HI: Alcohol & Drug Abuse Division (ADAD), Department of Health, State of Hawaii; 1997.
75. Bickerton YJ. Ethnic group differences in the clientele of a state detoxification unit. In: Seixas FA, ed. *Currents on Alcoholism (Vol. II).* New York: Grune & Stratton; 1977:357-365.
76. McLaughlin DG, Carter C, Rashad MN. Relative rates of alcoholism amongst racial groups in Hawaii. *Am J of Human Genetics.* 1975,27(6):63A.
77. Department of Health, State of Hawaii. *Alcohol and Drug Abuse Division Client Data System.* Honolulu, HI: Alcohol & Drug Abuse Division (ADAD), Department of Health, State of Hawaii; 1992-97.
78. Johnson RC. *Asian-Americans, Pacific Islanders, and Alcohol.* Honolulu, HI: Unpublished manuscript, University of Hawaii at Manoa; 1992.

People know Pueblo for its...



Snazzy Web Site?
(www.pueblo.gsa.gov)



Cool Consumer Information Catalog?



Easy-To-Remember Phone Number?
(1-888-8 PUEBLO)



Famous Hot Salsa?

In Pueblo, the free government information is also hot. Spice up your life by dipping into the Consumer Information Center web site, www.pueblo.gsa.gov. Or calling toll-free 1-888-8 PUEBLO to order the free Catalog.



A public service of this publication and the Consumer Information Center of the U.S. General Services Administration.

Emphysematous Pyelonephritis

Lisa Hui, Medical Student IV, MBA and Jinichi Tokeshi MD, Associate Clinical Professor at the University of Hawaii

Abstract

Emphysematous pyelonephritis is a rare, severe, necrotizing form of renal infection characterized by the presence of gas within the renal parenchyma or perinephric space.[1] In patients suspected of emphysematous pyelonephritis, computed tomography scan should be done promptly. Based on the available data and this case, surgical intervention appears to be the preferred treatment.

Emphysematous pyelonephritis is a rare, severe, necrotizing form of renal infection characterized by the presence of gas within the renal parenchyma or perinephric space.[1] Since the first case of pneumaturia reported in 1898, approximately 168 cases have been reported.[2] Mortality rate ranges from 7 to 90%.[1,2,3] This report illustrates the case of a patient with unilateral emphysematous pyelonephritis caused by *Escherichia coli* (*E. coli*), who recovered after a nephrectomy.

Case Report

A 62-year-old Japanese female with diabetes mellitus (DM) type 2 for 22 years, presented with one week of fever, chills, generalized body ache, and altered mental status. She also had dysuria, polyuria, polydypsia, dyspnea, mild epigastric pain, nausea, and vomiting. She had not taken her insulin for one week.

On physical exam, patient was lethargic but easily arousable. Vital signs included blood pressure 90/48, pulse rate 128/min, respiratory rate 28/min, and temperature 100F. Arterial blood gas revealed a pH of 7.45, pCO2 of 26.3, pO_2 of 65, bicarbonate 19, and oxygen saturation 94% on room air. The patient was obese and dehydrated. Cardiovascular exam revealed tachycardia. Lung exam revealed bilateral coarse crackles. Abdominal exam revealed a flat abdomen and the presence of bowel sounds. The abdomen was soft, non-tender, and without palpable masses. Skin exam revealed no crepitus.

Initial studies included a white cell count of 24.8 x10^9/L with 23% bands, 70% neutrophils, and 6% lymphocytes, and a platelet count of 91 x10^9/L. Chemistries included a serum sodium 116 mg/dl, potassium 3.6 mg/dl, chloride 87 mg/dl, bicarbonate 20 mg/dl, phosphate 1.5 mg/dl, blood urea nitrogen 36 mg/dl, creatinine 2.1 mg/dl, and plasma glucose 625 mg/dl. Urinalysis revealed a specific gravity ≤1.005, glucose ≥1000, trace ketones, moderate amount of leukocyte esterase, 20-50 WBC/hpf, and a moderate amount of bacteria. Chest x-ray revealed bilateral pulmonary edema. Abdominal x-rays in the supine and decubitus views revealed a nonspecific bowel gas pattern suggesting ileus. Urine culture grew >100,000 colonies/ml *E. coli*, and blood cultures grew *E. coli*, sensitive to all of the drugs tested.

The patient was admitted to the intensive care unit and managed for presumed urosepsis and diabetic ketoacidosis. She developed septic shock and was intubated for labored breathing. She was empirically started on levofloxacin and gentamycin. Infectious disease consultant assisted with the choice of antibiotic regimen, which included ampicillin, aztreonam, and trovafloxacin. Yet the patient continued to have fevers to 102F and developed acute respiratory distress syndrome. Platelet count fell to 21 x10^9/L. Serum creatinine rose to 4.2 mg/dl. The ultrasound of the kidneys on day 4 revealed no hydronephrosis and that upper pole of right kidney was obscured by echoes and shadowing suggesting air. The computed tomography (CT) scan of the abdomen with contrast (figure 1) on day 7 revealed a gas-filled mass, possible abscess, at the posterior aspect of the right kidney with displacement of Gerota's fascia and inflammation extending into the retroperitoneal space. The diagnosis of emphysematous pyelonephritis was made based on the CT scan results.

Because the patient's condition continued to decline on medical management, surgical options were explored. Percutaneous drain-

Figure 1.



Correspondence to:
Jinichi Tokeshi, MD
1451 South King Street, Suite 209
Honolulu, HI 96814
(808) 949-6221

age was considered, but there did not appear to be a well-defined, loculated area. The right nephrectomy was done on day 8. The nephrectomy was done retroperitoneally with a right flank incision. Gerota's fascia was filled with pus. Grossly, the entire kidney including cortex, medulla, and pelvis were hemorrhagic and necrotic with no normal tissue. Microscopically, there were extensive areas of acute inflammation, necrosis, and hemorrhage. The parenchyma contained small irregular spaces. In some areas, the perinephric soft tissue appeared to have separated from the renal parenchyma. Culture from the right kidney grew *E.coli* sensitive to all antibiotics tested.

Postopertively, the patient's condition improved and she was discharged from the hospital two weeks later.

Discussion

Emphysematous pyelonephritis is caused by organisms which cause urinary tract infection. *E. coli* accounts for 60% of the cases. Other pathogens include *Enterobacter aerogenes*, *Klebsiella pneumonia*, *Proteus mirabilis*, and *Pseudomonas aeroginosa*. Cases of *Candida* spp, *Cryptococcal neoformans*, *Clostridium septicum*, and *Streptococcus* sp have also been reported.[1,4] Infections are polymicrobial in 14-19% of cases.[4] Eighty percent of the cases are unilateral.[3] It is more common in women than men (2:1). Risk factors are diabetes (70 to 90% of cases), obstruction, and urinary tract infection with gas-forming microorganisms.[1,3,5] The main factors contributing to gas formation are enhanced CO_2 production from severe infection and hypoperfusion resulting in decreased gas elimination.[5] Presenting symptoms are similar to those of upper urinary tract infection, including fever, chills, nausea, and vomiting. Infrequently, there is crepitation over the thigh or flank area from extension of the emphysematous pyelonephritis into the perinephric space and retroperitoneum.[1] According to Wan et al, serum creatinine level was the single most significant variable in predicting outcome.[2]

Imaging studies of the upper tract should be performed in patients with upper urinary tract infection who do not respond after 72 hours of intravenous antibiotic therapy.[1] Abdominal x-rays reveal renal parenchymal gas in only 33% of cases, and the gas may be difficult to distinguish from bowel gas.[3,7] Ultrasound depicts gas as high-amplitude echoes with distal shadowing containing low-level echoes and reverberations ("dirty" shadowing or "comet" sign). Likewise, the renal parenchymal gas may be difficult to distinguish from the surrounding bowel gas and from renal calculi.[7] CT scan is the most reliable imaging tool in evaluating emphysematous pyelonephritis.[7,9] CT scan is useful in distinguishing emphysematous pyelonephritis from emphysematous pyelitis (gas localized to the renal collecting system), which has a different pathogenesis and prognosis.[1] Contrast should be used with caution especially in diabetic patients with compromised renal function.

The overall mortality rate for emphysematous pyelonephritis remains high. In patients treated medically, the mortality rate is 60% if the gas is confined to the renal parenchyma, and 80% if the gas has extended into the perinephric space. In patients treated with surgical intervention (percutaneous drainage or nephrectomy), mortality rate is ≤20%. Of the 15 bilateral cases reported, there were 7 deaths.[3] Note that the data is based on a small number of reported cases, and that the patients managed medically may include a larger portion of the more severely ill patients who were deemed poor surgical candidates.[8] Nevertheless, surgical intervention appears to result in a lower mortality rate. Surgical intervention is especially indicated in patients who do not respond to medical therapy and in patients with obstructive emphysematous pyelonephritis.[4]

Conclusion

Emphysematous pyelonephritis is a rare, severe, necrotizing form of renal infection characterized by the presence of gas within renal parenchyma or perinephric space. They present as severe cases of upper urinary tract infection. In those patients with abdominal x-ray or ultrasound suggesting emphysematous pyelonephritis, or who do not respond after 72 hours of appropriate antibiotic therapy, a CT scan of the upper uninary tract is indicated. It is the most reliable tool for diagnosing emphysematous pyelonephritis. The mortality rate for emphysematous pyelonephritis ranges from 7 to 90%. Surgical intervention is associated with lower mortality rate compared to medical management, and appears to be the preferred treatment.

References

1. Patterson JE, Andriole VT. Bacterial urinary tract infections in diabetes. *Infectious Disease Clinics of North America* 1997; 11: 735-751.
2. Wan YL, Lo SK, Bullard MJ, Chang PL, Lee TY. Predictors of outcome in emphysematous pyelonephritis. *The Journal of Urology* 1998; 159: 369-373.
3. Stein JP, Spitz A, Elmajian DA, Esrig D, Freeman JA, Grossfeld GD, Ginsberg DA, Skinner DG. Bilateral emphysematous pyelonephritis: a case report and review of the literature. *Urology* 1996; 47: 129-134.
4. Punnose J, Yahya TM, Premchandran JS, Ahmed HF. Emphysematous pyelonephritis responding to medical therapy. *International Journal of Clinical Practice* 1997; 51: 468-470.
5. Hildebrand TS, Nibbe L, Frei U, Schindler R. Case Report: Bilateral emphysematous pyelonephritis caused by *Candida* infection. *American Journal of Kidney Diseases* 1999; 33: E10.
6. Chen MT, Huang CN, Chou YH, Huang CH, Chiang CP, Liu GC. Percutaneous drainage in the treatment of emphysematous pyelonephritis: 10-year experience. *The Journal of Urology* 1997; 157: 1569-1573.
7. Joseph RC, Amendola MA, Artze ME, Casillas J, Jafri SZH, Dickson PR, Morillo G. Genitourinary tract gas: imaging evaluation. *RadioGraphics* 1996; 16: 295-308.
8. Wan YL, Lee TY, Bullard MJ, Tsai CC. Acute gas-producing bacterial renal infection: correlation between imaging findings and clinical outcome. *Radiology* 1996; 198: 433-438.
9. Shokeir AA, El-Azab M, Mohsen T, El-Diasty T. Emphysematous pyelonephritis: a 15-year experience with 20 cases. *Urology* 1997; 49: 343-346.

Hawaii Poison Center

More than 40 years of service

941-4411

Neighbor Islands Toll Free

1-800-362-3585

Donate to help us save lives



Children Act Fast
So Do POISONS!

News and Notes Henry N. Yokoyama MD

LIFE IN THESE PARTS...

New Breed of Ambulance Chasers? We noticed the following ad in the Jul 23 Sunday Advertiser: "Urgent news for people who took Rezulin...Many diabetes patients who took the drug Rezulin have experienced serious liver problems, including symptoms of jaundice, or dark urine. Some have developed liver failure and need liver transplants, while others have even died. If you or a family members used Rezulin and have had any of these problems, call us immediately, so we can evaluate your potential claim against the drug manufacturer.
Your legal rights have time deadlines so call today, toll free from anywhere in the U.S. at 1-800-The EAGLE for a free consultation. We practice law only in Arizona, but associate with lawyers throughout the U.S. to help injured people across the country.."

TOLDBERG & OSBORE
The Injury Lawyers

POTPOURRI...

THE CURE.... A man had been suffering with profound headaches for many years. Finally, after a variety of tests, his doctor isolated the cause. In the office, the doctor explained, "Well, Fred, we've found out why you're getting those headaches. You see, your testicles are pressed against the base of your spine. I'm afraid the only cure is castration."

Fred, who was desperate for relief, agreed to the surgery and miraculously the headaches vanished!

Leaving the hospital, Fred thought he'd never felt so good. Passing a men's wear shop, he decided to indulge in some new clothes to go with his new outlook on life. He spotted a sharp blazer and was looking it over when a clerk said, "Chest, 48 inches."

"That's right," said Fred. "How did you know?"

"It's my job to know," replied the clerk. "How about some shoes to go with the blazer."

"Why not," said Fred

"Size 10 1/2 triple-E."

"Right again! How did you know?"

"It's my job to know. Maybe some slacks to complete the outfit...38 waist and a 34 leg."

"Ah ha! You're wrong," barked Fred. "I've been wearing pants with a 34 inch waist for years."

"No way!" shot back the clerk. "If you wear pants that tight, your nuts will press into your spine so hard you'll get a terrible headache."

Stitches Jan 2000

Medical Tid Bits...

Cox 2 Inhibitors and Colon Cancer: Preliminary findings suggest that Cox-2 inhibitors may one day help prevent colon cancer. Researchers used high doses of Cox-2 inhibitors in patients with familial adenomatous polyposis. After six months, the number of potentially malignant polyps was reduced 25%.

Seizures: A study indicates that 25% of patients thought to have epilepsy are actually suffering from low blood pressure, heart rhythm problems or panic attacks. Clues that epilepsy is not the culprit becomes evident when the attacks occur while the patient is sitting or standing and the epilepsy medication doesn't help.

Estrogen & Heart Disease: At the March meeting of the American College of Cardiology in Anaheim, David Herrington of Wake Forest School of Medicine reported that estrogen with or without progestin has no effect on coronary arteries...The latest studies indicate that estrogen increases heart problems during the first year, but benefits the heart after three years...

MEDICAL TID BITS...

Super Drug: The FDA has approved Zyvox, the first entirely new type antibiotic in 35 years. Zyvox is approved for staph, pneumonia and other serious infections...

Error in the ER: If you go to the ER with chest pain, ER physicians will correctly diagnose and admit patients with MI and unstable angina 98% of the time. Still that leaves 26,000 patients erroneously sent home. What's more ER physicians will misdiagnose in women under age 55, African Americans Hispanics and other minorities...

It's Back: Physicians had prescribed TICLID for years to prevent clots in angioplasty, but when TICLID was linked to TTP (Thrombotic Thrombocytopenic Purpura), they turned to a less toxic PLAVIX. But now researchers have found TTP in PLAVIX users as well...

Fiber: Two new studies reported in the NEJM suggest that fiber may not protect again colon cancer. But there are other studies with solid research that indicate fiber lowers blood pressure, lowers blood cholesterol and prevents the onset of Type II diabetes.

POTPOURRI...

I interviewed a new patient who was fairly nonchalant when asked if she had any problems with her previous pregnancies...

"No, not really," she grinned, "but for the last one, they had to seduce me with spit." (For non-OB's that translates as "They had to induce me with pit or pitocin")

C. Lynne Conrad-Forrest MD Davis Calif

My mother noticed lots of tiny insects on her rose bush...So she sprayed it thoroughly. The next day, the pests were dead, but instead of dropping off, they were all stuck firmly in place. She had accidentally covered them with hair spray...

Derek Osborne

POTPOURRI...

Two psychiatrists met on the street one late afternoon...

"George, I don't know how you do it, a man your age! Here you are looking like you were just starting out. How can you look so fresh after listening to patients complain all day?"

The elder doctor replied, "Who listens?"

POTPOURRI...

During rounds, the attending points out an X-ray to a group of interns: "As you can see," she says, "The patient limps because his left fibula and tibia are radially arched...Michael, what would you do in a case like this?"

"Well," ponders the intern, "I suppose I'd limp too."

Travis Cream

An asteroid hits the speakers platform at a Seattle Conference Center and Al Gore, George Bush and Bill Gates all arrive in Heaven at the same time. They are greeted by God sitting on his golden throne. God speaks to Gore, asking what he believes in.

"I believe in the Internet and a clean environment," Gore replies.

"Very good," the Almighty says, "Come sit near me." Then he asks George Bush the same question.

"I believe in cutting taxes and taking good care of the military." says Bush.

"Excellent," says God. "Come sit near me." Then he asks Bill Gates what he believes in...

"I believe," Gates replies, "you're sitting in my chair."

Jacqueline Brown

MEDICAL TID BITS...

Brain Gymnastics: At a meeting of the American Academy of Neurology in May, two group of neurologists from University Hospitals and Case Western Reserve in Cleveland, reported that people who remain active outside of work by taking up stimulating activities (as painting, gardening or playing musical instruments) were three times less likely to develop Alzheimers. The Cleveland researchers found that intellectual activities were relatively more protective than physical ones...

The National Institute on Aging launched a research trial to see if Naproxen or Vioxx (Cox-2 inhibitor) can delay the onset of Alzheimers. Another study compares the effectiveness of Aricept with Vit E...

EROS Envy: The FDA has approved the EROS Clitoral Therapy Device (A soft plastic cup placed over the clitoris and operated by a palm sized battery pump...In trials, 80% of women with female sexual arousal disorder reported satisfaction and 55% said they could reach orgasm more easily (The price: $350 and a doctor's prescription)

HERCEPTIN: Since 1998, the gene spliced drug, HERCEPTIN has stemmed the growth of breast cancer in tens of thousands of women, but its maker Genenteck is alerting physicians to

possible adverse effects in a small percentage of patients with lung problems and who did not respond to chemotherapy...

MEDICAL TID BITS...

Heart Throbs...JAMA reports that 1/3 of all men and women feel no muscle pain during a heart attack. Heart attack victims without chest pain put off going to the hospital for two hours...John Canto, Univ of Alabama cardiologist and lead author explains why a heart attack patient without chest pain is twice as likely to die at the hospital. "Time is (heart) muscle and muscle is life."

From a computerized basis of 430,000 heart attack patients, Canto and colleagues determined six major risk factors that increase the chance of a typical heart attack:

a) Congestive heart failure;
b) Diabetes;
c) Hx of stroke;
d) Age 65+; e) Female gender;
f) Minority group...

Besides chest pain, the next biggest tip-off is extreme shortness of breath...Other less specific sy's include nausea, profuse sweating, and fainting. Some patients have a sudden overwhelming sense of doom or pain under their scapula. Another clue is any heart burn that gets worse with exertion...

"Call an ambulance and chew on a 325mg aspirin" says Margaret Legato, director of the Partnership for Women's Health at Columbia...

Medical Tid Bits...

Acute Respiratory Distress Syndrome: The syndrome occurs in pneumonia, trauma patients and in patients undergoing major surgery. An estimated 100,000 Americans develop the syndrome each year with half dying.

A new study shows that the ICU physician can save many of these patients by setting the respirators slower so that less air is delivered per Thomas Stewart, director of ICU at Mount Sinai Hospital in Toronto...

Blood Pressure Alert: The National Heart Lung and Blood Institute (NHLBI) compared traditional diuretics with three newer drugs. Patients on CARDURA had 25% more cardiovascular events and were twice as likely to be hospitalized as compared to patients on chlorothalidone. The NHLBI advises that hypertensive patients on alpha blockers (Hytrin and Minipress) should be on alternative drugs...

POTPOURRI...

Nothing There...

Back in the early 70's, I was a doctor at the Student Health Service...In those days, many girls went around "au nouveou" or bra less...

One day a skinny little coed came in with a sore throat. Naturally at that age, she had to be checked for infectious mononucleosis. I explained to her that I had to check her axillary lymph nodes...I proceeded to slide my hand under the sweater and completed the exam. Finding no nodes, I was pleased to announce, "There's nothing there." She replied, "I've been told that before."

Dr. Daniel Andrews
Waterloo Ont.

How's that Again? In the Coldwater Michigan Daily Reporter: "Man Hits Dog On Motorcycle."

Public Notice in USA Today:
"Anchorage: The state board of fisheries is considering whether to impose seasonal catch limits on tourists."

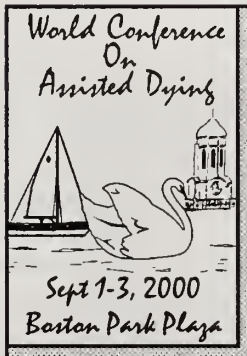
From an El Paso, Texas, politician's ad:
"Our communities need a partner in crime and that partner should be the city government."

Quotable Quotes:

"Usefulness is not impaired by imperfection...You can still drink from a chipped cup..." *Greta Nagel*

"I listen to critics because often they're a good source of information for what you have to do differently." *John Chambers*

"A truly great person is one who gives you a chance." *Paul Duffy*



ASSISTED DYING IS A HUMANE ALTERNATIVE

- Hear doctors, lawyers, and ethicists from around the world discuss how assisted dying is working now!
- See the *first-ever* Right to Die FILM FESTIVAL
- Meet family members who have participated in assisted dying

Call 800-247-7421 for information, or visit the web at *www.hemlock.org*, or email to *world@hemlock.org*



Over 4,000 services. Right at your, well, you know.
Ask Aloha United Way is a great community service where you can get answers to your everyday questions. Just visit askalohaunitedway.org or call 275-2000 (877-275-6595 toll-free from the neighbor islands).

Aloha United Way
together making lives better

Medical School Hotline, continued from p. 321

Health and three from retired/held positions); and, initiating a public health program in epidemiology with courses offered in all other four required disciplines of Public Health (health administration, environmental health, social and behavioral health and biostatistics). The Education Committee recommended that there be a rigorous annual review process that will be an integral part of faculty evaluation with objective criteria stressing publication in peer reviewed national and international journals. It is envisioned that students who are currently matriculated will be accommodated to complete the requirements towards the Master of Public Health or Master of Science degree.

Initially, the Department of Public Health Sciences and Epidemiology will offer the MPH and MS degrees in Public Health with concentration in epidemiology. An objective of the newly formed Department will be to apply for accreditation as a Program by the Council of Education in Public Health.

To meet CEPH standards, one introductory course in each of the five program specialties in Public Health will be taught. The five areas include epidemiology, biostatistics, environmental health, social science (health education), and health services administration and planning (or related area). In addition to the five core courses, basic and advance epidemiology will be required. A prototype epidemiology program will offer 30 or more courses that include: HIV/AIDS epidemiology, epidemiologic methods, epidemiologic surveillance and outbreaks investigation, computer assisted analysis of epidemiologic data, and epidemiologic field methods (an applied public health endeavor in which students conduct field projects). Epidemiology electives will include the following areas: nutrition, genetics, environment, aging AIDS, cancer and heart disease. Also required in epidemiology training will be a series of courses in biostatistics. The courses include research methods, categorical analysis, survival analysis, regression methods, survey methods and sampling. Finally, each graduate student must form a committee of two or more members from the epidemiology faculty.[2]

The new department will begin with two epidemiologists, a biostatistician, seven faculty in social science, maternal child health, and health services administration and planning. Anticipated are percentage joint appointments of faculty from the Cancer Research Center of Hawaii, Department of Medicine (Clinical Epidemiology), and the State Department of Health. Applications for students are available.

Dr. Edwin C. Cadman, Dean of the John A. Burns School of Medicine commented, "Epidemiology is often misunderstood, but it is not just the evaluation of data to produce incidence rates of diseases. It is the science of diseases or health problems in populations. Examples are cancer epidemiology (association related to causation of cancer); nutritional epidemiology (foods associated with diseases, for example, risk factors for heart diseases); infectious disease epidemiology (why certain population get liver infections, TB , HIV, the flu, etc.); aging; homelessness; violence in schools; and, substance abuse. The faculty have interests in these areas and have produced scholarly work in many of these fields." He added in a report to the administration, "I believe the future of public health at the University of Hawaii is something much greater than the current reputation. The key success factors are all the individuals, faculty, community leaders, staff, and state officials who have indicated their commitment to assure the renaissance of the School of Public Health."

References:

1. 1999-2000 School of Public Health Bulletin, College of Health Sciences and Social Welfare, University of Hawaii at Manoa.
2. School of Public Health Reorganization Committee. Recommendations of the Education Subcommittee , April 2000.

Space JAM?
Lots of important files? No more room? Don't let a few dollars keep you frustrated.
FREE! FIRST MONTH* Any Size Locker
*Some restrictions may apply
SAFE AND CLEAN ENVIRONMENT TO STORE ALL YOUR DOCUMENTS!
"EZ" hours - Open 7 Days a week!
(One of the best in town - truly an EZ Access.)
BBB MEMBER HAWAII
Call Now For FREE TRUCK & DRIVER!
VISA

EZ-ACCESS STORAGE SYSTEMS
HAWAII'S LEADING SELF STORAGE FOR OVER 20 YEARS!
CENTRAL AREA (near Ward Ave.) Close to Waikiki, Ala Moana & Downtown. 592-0220
NORTH KING AREA (in Kalihi) Close to Freeway, Kam Heights & Salt Lake. 832-0450

Aloha Laboratories, Inc.
...When results count
CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service
David M. Amberger, M.D.
Laboratory Director
Phone:(808) 842-6600
Fax: (808) 848-0663
E-mail: results@alohalabs.com
http://www.alohalabs.com

JOIN THE FIRM.
American Heart Association
Fighting Heart Disease and Stroke
EXERCISE.

Continued from p. 327

21. Rosenberg L, Mitchell AA, Shapiro Samuel, Sloane D. Selected birth defects in relation to caffeine- containing beverages. *JAMA* 1982;247:1429-1432.
22. Louik C, Mitchell AA, Werler MM, Hanson JW, Shapiro S. Maternal exposure to spermicides in relation to certain birth defects. *N Engl J Med* 1987;317:474-478.
23. Werler MM, Louik C, Shapiro S, Mitchell AA. Ovulation induction and risk of neural tube defects. *Lancet* 1994;344:445-446.
24. Cordier S, Bergeret A, Goujard J, Ha MC, Ayme S, Bianchi F, Calzolari E, De Walle HE, Knill-Jones R, Candela S, Dale I, Dananche B, de Vigan C, Fevotte J, Kiel G, Mandereau L. Congenital malformation and maternal occupational exposure to glycol ethers. Occupational Exposure and Congenital Malformations Working Group. *Epidemiology* 1997;8:355-363.
25. Sever LE. Looking for causes of neural tube defects: where does the environment fit in? *Environ Health Perspect* 1995;103 Suppl 6:165-171.
26. Shalat SL, Walker DB, Finnell RH. Role of arsenic as a reproductive toxin with particular attention to neural tube defects. *J Toxicol Environ Health* 1996;48:253-272.
27. Croen LA, Shaw GM, Sanbonmatsu L, Selvin S, Buffer PA. Maternal residential proximity to hazardous waste sites and risk for selected congenital malformations. *Epidemiology* 1997;8:347-354.
28. Watkins ML. Efficacy of folic acid prophylaxis for the prevention of neural tube defects. *Ment Retard Dev Disabil* 1998;4:282-290.
29. Finnell RH, Greer KA, Barber RC, Piedrahita JA. Neural tube and craniofacial defects with special emphasis on folate pathway genes. *Crit Rev Oral Biol Med* 1998;9:38-53.

Arleen D. Jouxson, Esq.
Attorney at Law



A.K.A. Arlene Meyers, MD, MPH

- **Wahiawa pediatrician since 1979**
- **Associate Clinical Professor, JABSOM**
- **1998 Roscoe Pound award winner in health care law**
- **President & founder of the Hawaii Coalition For Health**

NEED HELP?

- **with Par. Agreements?**
- **Understanding health care laws?**
- **Resolving disputes with health insurers?**

CALL 621-8806 (Oahu) for more information or for a free initial consultation at your place of business.

302 California Ave., #209, Wahiawa, HI 96786, Ph: 621-8806; Fax: 622-5599

Janssen Pharmaceutica

Is proud to support the
Hawaii Medical Journal

World leader in antimycotic research

JANSSEN • PHARMACEUTICA • • RESEARCH FOUNDATION •

Titusville, NJ 08560-0200

®1998 Janssen Pharmaceutica

Classified Notices

To place a classified notice:

HMA members.—Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.

Nonmembers.—Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Office Space

ALA MOANA BLDG.—PHYSICIANS WANTED to share space and support services. Interest in physical rehab. preferred. We have flexible rental arrangements starting at one half-day per week . Run your practice with no fixed overhead. Contact Dr. Speers, REHABILITATION ASSOCIATES, 955-7244.

Wanted

PSYCHIATRIST.— Kaneohe residential Program for adolescents seeks consultant two half-days per month. Schedule, duties, compensation negotiable. Contact Administrator: RAINBOW HOUSE 239-2399.

WE COLLECT PAST DUE ACCOUNTS

Only 25%* fee for Health Care Firms!

Why give up more!

Wood & Tait

HI Collection & Detective Agency
Staff on Kauai, Oahu, Maui, & Hawaii
http://www.woodtait.com

739-0433

jwood@woodtait.com

*Applies to accounts assigned during this promotion; no restrictions as to dollar size or age of accounts. Fee will increase to 50% if litigation or forwarding required; you will receive a contract.

The Weathervane Russell T. Stodd MD

In The Words Of The Late Louisiana Governor, Earl Long, "I Never Buy Politicians. It Is Cheaper To Rent Them."
The 2000 Hawaii legislative session is over without significant change in the scope of practice for ophthalmologic pretenders. For the present time the old adage remains - "If you want to be a physician, go to medical school." Certain key legislators recognize the dangers inherent in allowing unqualified people to practice medicine, and will listen to effective explanations. A few others are influenced by monetary lobbying, and present bills which could endanger the public. This year HOS leadership was again outstanding in attending hearings, testifying, and urging campaign contributions. On behalf of the HOS (and the public) thank you very much, President Timothy McDevitt.

Change Is Inevitable, Except From Vending Machines.
The use of herbal supplements continues to expand in the "alternative medicine" sphere. Responding to lay publications, the internet, advertisements, and testimonials, an increasing number of our patients are using gingko biloba, garlic, ephedra and echinacea, to mention a few. Now, the interesting part is that some herbals can cause prolonged bleeding, gastritis, stroke, or cardiac arrhythmia while others can interact with anesthetic drugs. Do your patients tell you what they are taking? A study at Texas Tech revealed that fully 70% of the patients using these remedies, failed to tell their doctors even when asked. Apparently, some patients fear that their doctors will make fun of them. The comforting part for the alternative practicioners is that they needn't be troubled by such things as scientific proofs.

There Are Those Living Under The Shadow Of Medical Sciences.
Hemodialysis reactions are rare but can be life-threatening. Usually such events are related to contamination with toxins or bacteria. In hospital A in a brief time period, seven patients on hemodialysis with an inpatient dialysis unit, developed acute onset diminished vision and hearing. The eye findings ranged through conjunctivitis, corneal opacities, optic neuritis, optic atrophy, uveitis, vertical nystagmus, and seventh nerve palsy. A careful analysis was conducted to identify risk factors, and construct a retrospective cohort to identify the source of the adverse events. Ultimately, it was determined that the patient injuries were associated with exposure to aged cellulose acetate membranes of dialyzers, allowing degradation products to enter the blood. The morbidity was severe as four case patients never fully recovered and five of the seven died within thirteen months.

Once You Give Up Your Principles, The Rest Is Easy.
The question of integrity in academic medicine has risen again with the hiring of the latest editor of the *New England Journal of Medicine*, Jeffrey Drazen, M.D. Harvard Professor Drazen forthrightly admits his financial relationships, which includes at least 21 pharmaceutical ties, ranging from stock ownership to consulting fees. Some of his companies are the heaviest hitters in the business, such as Merck, Pfizer, Glaxo Wellcome and Eli Lilly. The professor said that financing research is an ongoing problem, and that industry funding is necessary to pay for the large and expensive clinical trials required by the Food and Drug Administration to get a drug approved. Dr. Drazen (brazen Drazen?) stated, "My relationship with the entire industry has always been aboveboard." "At some point in the future, the policies (conflict of interest) may need to be re-examined, but the journal's most precious asset is that its decisions are not influenced by secondary gain." Oh really, but what is that old phrase about paying the piper or dancing with the devil?

Our Constitution Protects Aliens, Drunks, Congress And The Supreme Court.
With a rare unanimous decision the Supreme Court of the United States ruled that patients cannot sue in federal court for damages generating from an HMO physician who is rewarded for not providing care. The explanation given is that the federal government has encouraged HMOs to ration care and that the ERISA statute does not provide such legal complaint. Trial attorneys seem not dissuaded, however, because the ruling implies that such complaints may proceed in state courts where punitive damages can be added. Previous court decisions reveal that juries hold great sympathy for patients victimized by insurance plans when care is denied based upon monetary motives. Whatever - the lawyers are sure to find an avenue to the deep pockets.

Not Only Is There No God, But Try Getting Seen At An HMO On Week-Ends.
Despite the Supreme Court ruling, HMOs are losing favor with patients on a nationwide basis. Closed panel HMOs are flat at 30% for the past two years, while open-ended HMOs have declined from 20% to 16% in 1999. Meanwhile PPO memberships have grown stronger, moving from 35 to 43% in the same time. More employers now prefer PPOs because they don't limit coverage to a closed panel of providers, most allow self-referrals to specialists, and they don't require plan's approval before beginning treatment regimens. PPO patients are less likely to be denied needed care, and that reduces employers' risk of liability.

Might Doesn't Make Right, But It Never Gives Up Trying.
In an outrageous display of intimidating power Oxford Health Plans in New York is demanding that some 200 primary care physicians return payment for services which deviated from "HCFA national benchmarks." Some of the claims range up to $100,000, and Oxford informed physicians they must pay 75% within 10 days or the matter will be turned over to arbitration. But wait!! There are no HCFA benchmarks for E&M coding for office visits, as stated by Terrence Kay, HCFA's director of practitioner and ambulatory care. Alan Muney, M.D. Oxford CEO, later admitted that there are no such benchmarks, but their own consulting firm developed them "using HCFA data." Arbitration is expensive and some physicians have just paid Oxford, but Scott Einiger, counsel for the New York County Medical Society, believes that Oxford is misrepresenting HCFA, and is strong-arming doctors into repaying money that they don't owe. The question is why doesn't Oxford deny the claims in the first place if they believe they are miscoded? The probable explanation is that Oxford is skirting around the statute requirement to pay clean claims within 45 days, by paying as coded and then making demands for repayment at a subsequent date.

There Is No Limit To How Bad Things Can Get.
There is an old saying that figures don't lie, but liars figure. Hawaii Medical Service Association announced that they will raise rates for about 10,000 small Hawaii businesses by about 8.5% starting July 1st. This comes on top of last year's increase of 8%, meaning a whopping16.5% in two years. Many small businesses are suffering, and have no choice but to try to pass it on to customers, except for those of us in medicine who are locked into reimbursement schedules. Yet just this past month HMSA announced that net profits more than tripled in 1999, rising to $35.9 million. HMSA called in the accountants to show 1999 operational cost increase (loss) of 1.7%, to assuage any suggestion of exploitation. Yet, isn't there something strange about this picture? The profits have tripled, competition (other than Kaiser) is almost obliterated, so let's ratchet rates up even more! And this is a mutual serving us members?

Washington Couldn't Tell A Lie, Nixon Couldn't Tell The Truth, And Clinton Couldn't Tell The Difference.
The Charlemagne Prize is a German medal awarded annually "to deserving personalities who have fostered the idea of Western unification in political, economic and intellectual spiritual regard." This pantheon of statesmen includes Winston Churchill, Vaclav Havel and Konrad Adenauer to mention a few. Only two Americans, George C. Marshall in 1959 and Henry Kissinger in 1987, have been so honored. This year's award goes to William J. Clinton! Now perhaps because I am slightly distant from the baby boomer generation, it is difficult for me to think of a draft-dodging, dress staining, lying poltroon who was fined $89,000 by a federal judge for lying, who may be disbarred by the Arkansas Supreme Court, and was only the second president to suffer impeachment, as deserving of such recognition. But, perception varies, and apparently it is easy for the sixties generation to put aside trivial loyalty aberrations and "minor" peccadillos.

ADDENDA
- ❖ 40 fireflies in a jar will generate enough light to read by.
- ❖ Pat Buchanan's move from the Republican to the Reform Party raised the intellectual level of both.
- ❖ Everything in California is drive through. They even have a burial service called "Jump in the Box."

Aloha and keep the faith —rts■

Contents of this column do not necessarily reflect the opinion or position of the Hawaii Ophthalmological Society. Editorial comment is strictly that of the writer.

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA

One of a kind.



Unmistakable.

At MIEC, we know what it means to stand out in the crowd. Twenty-five years ago, we started the West's first doctor-owned, not-for-profit malpractice insurance company. The idea quickly caught on, and now there are dozens of "doctor-owned" companies throughout the country.

But there is only one MIEC. Our rate and dividend history is unparalleled. Guess that's why we don't need a large sales or marketing staff. Our track record speaks for itself.

The original is still the best. Call us.

Medical Insurance Exchange of California
6250 Claremont Avenue, Oakland, California 94618
Telephone 800-227-4527 www.miec.com
HAWAII CLAIMS OFFICE: 1360 South Beretania Street, Honolulu, Hawaii 96814

Our 25th Anniversary, 1975–2000

Sponsored by Hawaii Medical Association

Hawaii medical journal
v. 59
no. 8
August 2000
Received on: 09-25-2000
Brown University Library
SCI

I-S
R5
H25x
SCI

HAWAII MEDICAL JOURNAL

September 2000 Volume 59, No. 9 ISSN: 0017-8594



MIXED ADC 967

HAWAII MEDICAL ASSOCIATION 1856

Stability
Commitment
And a good set of ears

Listening. It's a valuable skill, particularly in today's complex health care arena. To help ensure high-quality care and affordable coverage for our members, HMSA actively seeks out the knowledge and expertise of Hawaii's physician community.

As participants of HMSA and Health Plan Hawaii boards and advisory/liaison committees, nearly 200 Hawaii physicians provide valuable input regarding medical policy, health plan benefits, quality assurance and other important health care issues. Their efforts have a direct, meaningful impact on HMSA members and the community at large.

Here are the many boards and panels that enable HMSA to make sure that Hawaii's physicians are indeed heard:

HMSA Board and Committees
Board of Directors
Benefits Administration Committee
Fee Review Committee
Medical Review Committee
Quality Oversight Committee

Health Plan Hawaii Board and Committees
Board of Directors
Quality Management Committee

Physician Liaison Committees
Honolulu Physician Liaison Committee
West Oahu Physician Liaison Committee
Windward Oahu Physician Liaison Committee
East Hawaii Physician Liaison Committee
West Hawaii Physician Liaison Committee
Kauai Physician Liaison Committee
Maui Physician Liaison Committee
Vision Liaison Committee

Program Advisory Committees
Asthma Guidelines Advisory Group
Cardiovascular Risk Management Program Task Force Advisory Committee
Diabetes Task Force for Clinical Practice Guidelines
Credentialing Committee
Disease Management Physician Advisory Committee
HealthPass Medical Advisory Committee
Pharmacy and Therapeutics Advisory Committee
- Asthma/Allergy Subcommittee
- Cardiology Subcommittee
- Dermatology Subcommittee
- Endocrinology Subcommittee
- Ophthalmology Subcommittee
- Psychiatric Subcommittee

Quality Improvement Committee
WorkComp Hawaii Advisory Committee

For a list of current board and committee physician membership, please call 948-6330 on Oahu or toll-free 1 (800) 790-4672 from the Neighbor Islands.

HMSA and Health Plan Hawaii. Health plans that listen.

HMSA Blue Cross Blue Shield of Hawaii

Choices for a Healthier Hawaii

Health Plan Hawaii

A Federally Qualified HMO Affiliate of HMSA

NCQA Accreditation EXCELLENT

For Commercial HMO

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
Vincent S. Aoki MD, Benjamin W. Berg MD,
John Breinich MLS, Satoru Izutsu PhD,
James Lumeng MD, Douglas G. Massey MD,
Myron E. Shirasu MD, Frank L. Tabrah MD,
Alfred D. Morris MD

Journal Staff
Managing Editor: Becky Kendro
Editorial Assistant: Drake Chinen

Officers
President: James Lumeng MD
President-Elect: Philip Hellreich MD
Secretary: Gerald McKenna MD
Treasurer: Paul DeMare MD
Past President: Patricia L. Chinn MD

County Presidents
Hawaii: David Camacho MD
Honolulu: Walter K.W. Young MD
Maui: Michael Sayona MD
West Hawaii: Ali Bairos MD
Kauai: Patrick Aiu MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 1999 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 348

Medical School Hotline
Satoru Izutsu PhD 349

Hawaii State Legislature - Act 228, Medical Marijuana Law
Heidi Yeager Singh 351

The First Non-Heart Beating Organ Donor in Hawaii
Alan H.S. Cheung MD, Holly K. Kailani MS, RN, C, and Whitney M.L. Limm MD 353

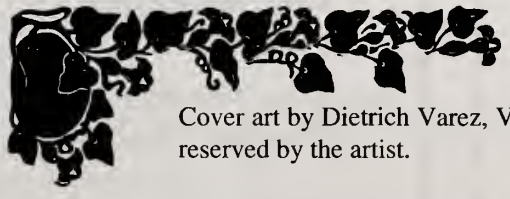
Malpractice Risk Assessment Among Different Approaches For Informed Consent
Renee L. Sato, Medical Student, Loren G. Yamamoto MD, MPH, MBA, and Gaylyn G. Li MD 357

Diarrhea-associated Hospitalization among Children in Hawaii
Paul V. Effler MD, Robert C. Holman MS, Umesh D. Parashar MBBS, MPH and Roger I. Glass MD, PhD 362

News and Notes
Henry N. Yokoyama MD 366

Classified Notices 369

Weathervane
Russell T. Stodd MD 370



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

Honolulu Academy of Arts

The Academy of Arts was founded by Mrs. Charles M. Cooke and dedicated in 1927.

Editorial

Norman Goldstein MD
Editor, Hawaii Medical Journal

Hawaii's First Cadaveric Heart Transplant

Alan Cheung MD and his associates present another first for Hawaii: a successful cadaveric heart transplantation. This interesting paper addresses the cultural and ethical issues surrounding organ transplantation.

A prior "first" pertaining to this topic was the Transplantation of Human Organs Program sponsored by the Honolulu Medical Group Research and Education Foundation in 1969. As coordinator for this professional and public symposium, I recall our mainland speakers Robert A. Good MD, Irvine H. Page MD, Thomas E. Starzi MD, and David S. Rubsamen MD, LLB. All were authorities on organ transplantation. This was the year of the first kidney transplant procedure performed in Hawaii.

Of that symposium, Henry Yokoyama MD, Hawaii Medical Journal's News Editor, reported, "One of the best bargains in recent years has been the symposium of human organ transplantation sponsored by the Honolulu Medical Group Research Foundation. For a nominal fee of $15, we attended two morning sessions and an evening banquet for two at the Ilikai, replete with cocktails."[1]

As Cheung and his associates point out, if Hawaii cultivated more organ donation, many more heart, kidney, liver and pancreas transplants could be done here.

Malpractice Risk Assessments Among Different Approaches for Informed Consent

Doctors Lauren Yamamoto and Gaylyn Li, with medical student Rene Sato, review the difficulties in obtaining informed consent using two examples: an obstetrics case and a pediatric emergency room event. This manuscript should be reprinted and distributed by all of the malpractice carriers in Hawaii, because similar problems occur in numerous offices and specialties.

The authors indicate that medical malpractice attorneys choose full disclosure as the option with lesser liability in situations, regardless of the variables particular to an event. They also note an attorney's comment, "if all doctors (gave full disclosure) I wouldn't have much business."

Let's not give them as much business!

Diarrhea-Associated Hospitalizations Among Children in Hawaii

Paul V. Effler MD from the State Department of Health, and his associates from the Centers for Disease Control and Prevention in Atlanta, submit an exhaustive study of 2,288 children admitted to Hawaii hospitals with diarrhea-associated diagnoses. Rotavirus is the most commonly associated pathogen, but is usually not tested in children, because additional costs are incurred without significantly altering the treatment.

During this study of acute care hospitalizations between 1994 and 1997, 11.3% of all hopitalizations for children less than five years of age had a diarrhea-associated diagnosis listed at the time of discharge. In Hawaii it is estimated that 1 in 32 children may be hospitalized by age five. Since suspension of the use of rotavirus vaccines, we should encouraged parents and caretakers to use oral rehydration solutions to prevent the development of dehydration in children with diarrhea. As most of us were taught early in medical school, "push the fluids."

1. Yokoyama, H. N. Transplant Symposium, Notes and News Haw Med J. Nov-Dec 1969 and Jan-Feb 1970. Look for Henry s report on the symposium which can be found in next month s News and Notes.

WE COLLECT PAST DUE ACCOUNTS

Only 25%* fee for Health Care Firms!

Why give up more!

Wood & Tait

HI Collection & Detective Agency
Staff on Kauai, Oahu, Maui, & Hawaii
http://www.woodtait.com

739-0433

jwood@woodtait.com

*Applies to accounts assigned during this promotion; no restrictions as to dollar size or age of accounts. Fee will increase to 50% if litigation or forwarding required; you will receive a contract.

Aloha Laboratories, Inc.
...When results count

CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

David M. Amberger, M.D.
Laboratory Director

Phone:(808) 842-6600
Fax: (808) 848-0663
E-mail: results@alohalabs.com
http://www.alohalabs.com

Medical School Hotline

Student Profile: Class of 2004 John A. Burns School of Medicine (JABSOM)

Satoru Izutsu PhD,
Associate Dean
Chair, Admissions Committee

The first class of the millennium began its first day of medical school on August 2, 2000. The week was highlighted by a "White Coat Ceremony" sponsored by the Arnold P. Gold Foundation. A message from Dr. Gold, the foundation founder, read, "...I wish you the same joys and satisfaction I have had in the practice of medicine over many years. Work hard, care, and never forget human suffering...." The members of the JABSOM Class of 1979 presented each student with their first white coat.

The class consists of thirty-six men and twenty-six women with a median age of 24. This is the 34th entering class and the 12th class to undertake their medical education in the format titled, Problem Based Learning (PBL) Curriculum.

One thousand one hundred and fifty-three applied for sixty-two positions. Of the total, 236 qualified to be interviewed. Included in the total accepted are nine graduates from Imi Ho'ola, the Post Baccalaureate Program. The Imi Ho'ola Program addresses the issue of diversity and those who are educationally, socially, and economically disadvantaged. Fifty-six are residents of the State of Hawaii and six are from the U.S. mainland.

JABSOM is the world's most ethnically diverse school. In the incoming class, there are 19 Japanese, 11 Caucasians, 8 Hawaiians, 7 Filipinos, 6 Chinese, 3 Koreans, 3 Vietnamese, 2 Pacific Islanders, 1 East Indian, 1 Laotian, and 1 Southeast Asian.

Twenty-six are graduates of the University of Hawaii at Manoa and Hilo and one from Hawaii Pacific University. There is one graduate from a foreign college, University of Philippines. Thirty-four are from mainland colleges which include University of California (San Diego, Davis, Irvine, Los Angeles, Riverside, and Santa Barbara), Boston College, Columbia University, Loyola Marymount, Boston University, Brown University, California Polytechnic State University, California State University, Case Western Reserve University, Colorado State University, Cornell University, Harvard University, Lawrence University, Mount Holyoke College, Ripon College, Stanford University, Swathmore College, University of Chicago, University of Michigan, University of Pennsylvania, University of San Diego, Wake Forest University, Worcester Polytechnic Institute, and Yale University.

All entering students have Baccalaureate degrees. In addition, 8 have their Masters Degrees, 3 with Doctorate Degrees, and one with a degree in Jurisprudence. Twenty-nine have degrees in Biology, 3 in Psychology, 2 in Biochemistry, 2 in Chemistry, 2 in Mechanical Engineering, and 1 in each of the following college majors: Accounting, Accounting and Strategic Management, Anthropology, Biology and Society, Biology/Asian American Studies, Biology/Visual Arts, Biomedical Engineering, Chemical Engineering, Hawaiian, History, History and Sociology of Science, Human Physiology, Liberal Studies/Pre-Med., Mathematics, Microbiology, Microbiology/Music, Neuroscience and Behavior, Nursing, Philosophy, Physical Therapy, Physics and Biology, Political Science, Russian Area Studies, and Social Science.

The Admissions Committee was composed of 11 clinical and regular faculty members, 6 men and 5 women. Eight were clinicians, two social scientists and one basic scientist. Hawai'i's major ethnic groups were represented as well as a variety of age levels. The Committee met twenty-one times between September, 1999 to mid-May 2000. During this period, they rated, by secret ballot, a total of 236 candidates which included 20 candidates for the Imi Ho'ola year 2000 Program. The ratings were ranked to determine the top fifty-three who would be offered acceptances and those to be on the list of alternates. Each Committee member determined a rating for each candidate after examining the following documents: Hawai'i residency status, academic scores, scores from the Medical College Admissions Test (MCAT), interviews, essays that addressed the questions, "Why Medicine?" and "Why the John A. Burns School of Medicine?", letters of recommendations, biographical sketch and transcripts from the American Medical College Admission Service (AMCAS). Credits were given for extracurricular activities related to human services and graduate degrees. Discretionary points were considered for exemplary science and cumulative grade points in the last two years of undergraduate studies.

The entering JABSOM class's MCAT scores are Verbal Reasoning—10; Physical Sciences—10; Writing Sample—P; and Biological Sciences—10. The cumulative grade point average (GPA) is 3.7 (median) and the science GPA is 3.6 (median).

Each entering student is assigned a faculty advisor who maintains contact with the student throughout the four years of medical school. Students are strongly encouraged to seek the advice of the assigned advisor.

The sixty-two students are on an exciting journey. Each student has been selected from among the hundreds of their peers to become competent, culturally sensitive physicians who will improve the quality of health of all people, especially those who live in Hawaii and the Pacific.



introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA

Hawaii State Legislature - ACT 228 Medical Marijuana Law

Heidi Yeager Singh

Background

In June 2000 Hawaii's Governor signed into law a bill to allow for the medicinal use of marijuana (ACT 228). The law exempts physicians who recommend marijuana to their patients and patients who use marijuana, for a specific medical condition, from *state* criminal penalties.

ACT 228, however, directly contradicts federal law. Under federal law, physicians who recommend marijuana to a patient are **in danger of losing their federal license to prescribe controlled substances (DEA license) and could be subject to criminal prosecution.** More specifically, federal law establishes a clear prohibition against knowingly or intentionally distributing, dispensing or possessing marijuana (21 U.S.C. §§841-44). Therefore, patients using marijuana, even for medical purposes, could also be subject to federal penalties.

What is Hawaii Medical Association's position on the medical use of marijuana?

The HMA opposed the medical marijuana bill based primarily on two principles. First, *federal law still prohibits physicians from recommending marijuana to their patients.* Second, the HMA has consistently stated that we do not oppose any legalization of medical marijuana. Rather, we believe the use of medical marijuana must be approved through the same federal process that all prescriptive drugs in our country undergo — based on evidence from scientific, controlled studies, approved by the U.S. Food and Drug Administration and distributed through pharmacies.

HOW DOES THE STATE LAW WORK?

Can physicians recommend medical marijuana for any medical condition?

Under the law, only patients with a "debilitating medical condition" can use medical marijuana. The law defines "debilitating medical condition" as: 1) cancer, glaucoma, positive status for human immunodeficiency virus, acquired immune deficiency syndrome, or the treatment of these conditions; or 2) A chronic or debilitating disease or medical condition or its treatment that produces one or more of the following: cachexia or wasting syndrome; severe pain; severe nausea; seizures, including those characteristic of epilepsy; or severe and persistent muscle spasms, including those characteristic of multiple sclerosis or Crohn's disease; or 3) any other medical condition approved by a panel within the Department of Health (in response to a request from a physician or "potentially qualifying" patient).

Advising on risks and benefits of medical marijuana

It is important to note that because marijuana has not been fully tested in properly controlled clinical trials, physicians should be extremely cautious when discussing the risks and benefits of its medical use. A physician may be at risk of malpractice liability if a patient suffers an adverse effect, of which the physician was unaware, that would likely have been identified if such testing had taken place.

Can a physician be held liable if a patient's request for marijuana is denied?

The ultimate responsibility to determine the treatment appropriate for the patient rests with the physician. If the physician does not believe that marijuana would be therapeutically beneficial for the patient, the physician's refusal to write a certificate that the potential benefits of the medical use of marijuana would likely outweigh the health risks for the patient would be a matter of medical judgment for which the physician would not be held liable. Whether the physician should recommend that the patient see another physician would be within the discretion of the treating physician.

If a physician wants to "recommend" medical marijuana under the new state law, what needs to be done?

In order to avoid arrest or prosecution under STATE LAW for recommending medical marijuana to a patient, the physician must do all of the following:

1). Diagnose the patient as having a debilitating medical condition as defined in the law;

2). Explain the potential risks and benefits of the medical use of marijuana;

3). Complete a written certification, issued by the Narcotics Enforcement Division (NED) of the Department of Public Safety, which requires a recommendation that the patient use medical marijuana. The physician must state in the medical record or in a separate statement that, in the physician's professional opinion, the qualifying patient has a debilitating medical condition and the potential benefits for the medical use of marijuana would likely outweigh the health risks for the qualifying patient. Written certifications are valid for one year, although the physician may revoke them at any time.

4). Contact the NED (phone: 594-0150) to provide the patient's

name, address, patient identification numbers (driver's license number), and other identifying information so that the patient may obtain a registry identification certificate. Any change in the patient's information must be provided by the physician within five working days to the NED.

The NED will provide physicians with the necessary forms to include qualifying patient and primary caregiver registry identification forms, physician written certification forms and an information packet describing the laws and regulations on the program.

Is it okay to write a recommendation for medical marijuana on a personal prescription pad?

NO. This is a violation of federal law.

Patient Registry

If a physician wants to recommend to his or her patient that they use marijuana for a debilitating medical condition, the patient must register with the NED and obtain a registry identification certificate (there will be a registration fee of $25). The physician who issues a written certification shall register the name, address, patient identification number and other identifying information with the NED.

Primary Caregivers

The law permits each patient to have one primary caregiver who has agreed to undertake responsibility for managing the well being of the patient who is using medical marijuana. In the case of a minor or an adult lacking legal capacity, the primary caregiver shall be a parent, guardian, or patient having legal custody. Primary caregivers must also register with the NED.

How much marijuana is the patient allowed to have?

The law does not provide for a so-called distribution system of medical marijuana. It does state, however, that the amount of marijuana the patient is allowed to have is not to exceed three mature marijuana plants, four immature marijuana plants, and one ounce of usable marijuana per each mature plant.

Heidi Yeager Singh is Director of Legislative and Government Affairs at the Hawaii Medical Association and can be reached at (808) 536-7702, ext. 2241 or e-mail: heidi_singh@hma-assn.org



HAWAII POISON CENTER

OAHU: 941-4411

NEIGHBOR ISLANDS TOLL-FREE:

1-800-362-3585

Free Hotline 24 Hours a Day.

POISON CENTER TIPS

- Keep the number of the Hawaii Poison Center on or near your telephone.
- If you suspect a poisoning, do not wait for signs and symptoms to develop. Call the Hawaii Poison Center immediately.
- Always keep Ipecac Syrup in your home. (This is used to make a person vomit in certain types of poisoning.) **Do not use Ipecac Syrup unless advised by the Hawaii Poison Center.**
- Store all medicines, chemicals, and household products out of reach and out of sight, preferably locked up.
- A good rule to teach children is to "always ask first" before eating or drinking anything—don't touch, don't smell, don't taste.

Donate to help us save lives.

Mail checks, payable to:

Hawaii Poison Center

1319 Punahou Street, Honolulu, HI 96826

The First Non-Heart-Beating Organ Donor in Hawaii - Medical and Ethical Considerations

Alan H.S. Cheung MD, Holly K. Kailani MS, RN, C, and Whitney M.L. Limm MD

Abstract

The shortage of organ donors remains a major obstacle in transplantation in Hawaii. Some patients die while waiting for a life-saving organ. Across the nation, "marginal" donors, including non-heart-beating donors are used. The authors describe the first successful non-heart-beating organ donor transplant in Hawaii, and include medical and ethical considerations.

Introduction

Since the initial kidney transplant in 1969, more than 500 kidneys have been successfully transplanted in Hawaii.[1] This was followed by successes in transplantation of other organs, including the heart, liver, and pancreas.[2,3,4] Many lives have been saved or prolonged because of these medical innovations. However, donor shortage remains a major limiting factor in transplantation. More than 200 patients are waiting for a kidney, liver, heart or pancreas at any given time in Hawaii, and, unfortunately, some of these patients will die while waiting for an organ to become available.

Hawaii consistently has the lowest number of organ donors, based on population, in the U.S.[5] A number of factors may account for this disparity, but one important factor seems to be associated with our high population of Asian-Americans. A focus group study showed that Asian Americans were likely to be uninformed about organ donation, not to discuss organ donation within the family, and to believe that the body should remain whole for the afterlife.[6,7]

In order to increase the number of donors, one approach used successfully elsewhere is to expand the criteria for cadaveric donation. Organs from more "marginal" donors are now accepted, and organs from non-heart-beating donors are used.[8,9,10,11,12] In many other countries, the concept of brain death was never accepted; therefore, all organs have come from non-heart-beating donors.[13,14,15] In the U. S., all donors were non-heart-beating donors until the early 1970's, when a Harvard University committee first produced criteria for defining brain death. Some organizations continued to use non-heart-beating donors, while others have resumed the use of non-heart-beating donors within the past 10 years.[16] The use of organs from non-heart beating donors is not a startling new technology, but a return to a previously accepted practice, using current technology to increase the likelihood of recipient survival.[8]

This report documents the first successful use of a non-heart-beating cadaveric organ donor in Hawaii. The case report is followed by a summary of the medical and ethical issues involved in the use of non-heart-beating donors.

Case Report

A 47 year-old female nearly drowned while scuba diving in January 1996. Her diving companion found her face down in shallow, but rough waters. She suffered cardiopulmonary arrest requiring 20 to 30 minutes of cardiopulmonary resuscitation (CPR) at the scene; was successfully resuscitated and brought to the emergency room. She was intubated but had suffered severe anoxic brain injury with fixed and dilated pupils and no corneal reflexes. She was then transferred to the Intensive Care Unit where she became hypotensive requiring dopamine and levophed support.

Neurologic consultation revealed severe brain injury and initial evaluation was consistent with brain death. A second neurologic evaluation later indicated slight decortication of the right hand, thereby not meeting the clinical criteria for brain death. Nonetheless her overall prognosis was grim and irreversible, with no chance for meaningful recovery.

Her next of kin were informed of her clinical condition and prognosis. The parents felt that the patient would not want her condition to be prolonged in this manner, based on past verbal advanced directives. The patient had always been very active, vital, and altruistic; this was reflected in her work with a volunteer organization in Third World countries prior to her accident. The parents further felt that she would want to donate her organs to help others, if at all possible. If not, then life support should be withdrawn.

Because she was not brain dead, procurement of organs was not possible in the usual manner. She could, however, qualify for organ donation as a "non-heart-beating donor" after withdrawal of support and cardiopulmonary death occurred. This plan was approved by the family, attending physician, and hospital administrators.

Non-heart-beating organ procurement was performed using the University of Pittsburgh protocol.[17] The patient was taken to the operating room (O. R.) and was taken off the ventilator and vasopressors at 2:40 PM. She had no spontaneous respiration and shortly developed ventricular tachycardia followed by asystole at 2:50 p.m.

Correspondence to:
Holly K. Kailani MS, RN, C
St. Francis Medical Center
Dept. of Surgery
2226 Liliha St., #205
Honolulu, HI 96817

She was pronounced dead by her attending physician in the O. R. at 2:52 p.m. Heparin, lasix and mannitol were administered intravenously and external cardiac compression was initiated in an attempt to circulate these drugs. Surgery was initiated and two kidneys were procured and successfully transplanted later at St. Francis Medical Center in Honolulu. The kidneys functioned immediately and are still functioning well after 3 years.

Discussion

The shortage of donors is a major problem in providing organ transplantation in Hawaii. At any given time more than 200 patients in Hawaii are waiting for a kidney, heart, liver or pancreas, yet on the average, only 12 to 13 cadaveric donors are available each year. This disparity results in some patients dying while on the waiting list. To alleviate this problem, additional sources of organs have been sought, including the use of living donors and "marginal" cadaveric donors.

The strategy of using living donors is not new. In fact, the first kidney transplant successfully performed in 1954 used an identical twin sibling as the donor.[18,19] In many Asian countries where, until recently, brain death was not legally accepted and consent for cadaveric donation is very low, living donors were the only practical source of organs.[20,21] The use of living-related donors (i.e. siblings, parents or children) where there is an immunologic rationale based on HLA matching, has been expanded to living-unrelated donors (i.e. spouses, friends, distant relatives) where the overwhelming rationales are availability and expediency. With living donors, only kidney donations have been practical; partial pancreas and liver donations have been dangerous, and heart donations are impossible.

Cadaveric donors remain a key source of life-saving organs. The "ideal" cadaver donors are young (ages 18 to 55) patients dying from irreversible brain death, but otherwise perfectly healthy with intact cardiopulmonary function that allows perfusion of all organs until the time of organ procurement in the operating room. But these perfect donors are scarce. This has led to the use of less than perfect or "marginal" donors who are older (> 60 years old), younger (< 6 years old), or have systemic illnesses which may affect the transplanted organ (hypertension, hemodynamic instability, mild nephrosclerosis, diabetes, or mild focal infections).[8,22] The use of "marginal" donors includes the non-heart-beating donor (NHBD).

The use of NHBDs is not new.[19] Prior to brain death being universally accepted and legalized in the U.S., NHBDs were the only source of cadaveric organs for transplantation. These were not ideal organs since varying degrees of warm ischemia after cessation of cardiopulmonary function often led to poor organ function.[8] When the diagnosis of brain death became widely accepted, these heart-beating, brain dead cadaveric patients became the ideal standard. However, some programs in the U.S. continued to use these NHBDs selectively when offered the opportunity.

The term "non-heart beating donor" encompasses two different clinical scenarios. The first is the "controlled" NHBD where death can be anticipated, as in terminally ill patients whose family wishes to withdraw futile life support, or who have orders stating "Do Not Resuscitate". The other is the "uncontrolled" NHBD where death is not anticipated, as in trauma victims who die in the Emergency room.[23]

Table 1.— Non-Heart-Beating-Donor Classifications

	Controlled	Uncontrolled
Cause of death	Illness	Trauma
Cardiac arrest	Anticipated	Unplanned
Hemodynamics	Stable	Unstable
Initiation of preservation	Operating room	Intensive care unit or emergency room
Approach	Open	Catheter
Organ recovery	Multiple	Kidneys only
Warm ischemia	Shorter	Longer
Delayed graft function	Lower	Higher

The use of "uncontrolled" NHBDs is not practical, either medically or ethically. Since these patients die suddenly and unexpectedly, the warm ischemia time tends to be prolonged before procedures can be done to cool and preserve the organs. Furthermore, because of the unexpected nature of these deaths, families often are not readily available to provide consent for donation, further prolonging the warm ischemic times.

This leaves "controlled" NHBD organ recovery as the most viable option. In this scenario, the patient has a terminal illness (i.e. irreversible brain damage from anoxia or drowning, that does not meet the strict criteria for brain death) and the family wishes to withdraw futile life-support. (This is a not uncommon scenario occurring daily in our ICU's.) The family wishes to have the opportunity for organ donation, if possible. If there are no obvious contraindications for organ donation (i.e. malignancy, systemic infection, baseline organ-specific illness), after informed consent by the family, the patient is brought to the O. R. The patient is sterilely prepped and draped to facilitate rapid surgery later. The patient is then extubated and all hemodynamic support drugs are stopped. A physician, who cannot be a member of the transplant team, observes for cessation of respiratory function and asystole. Under most protocols the waiting period is 5 minutes from asystole until death is pronounced by the physician, and only then can medications and surgery commence for organ procurement.[17,19]

In some instances, the patient actually does not die, but continues to have labored respiration and cardiac function for a period of time. After about an hour in this deteriorating state, the organs are usually not usable for transplantation, and the patient is then returned to the floor.[17,19]

Using this type of protocol, from 1994 to 1996, a total of 229 kidneys from NHBDs were collected by 30 of the 63 U.S. organ-procurement organizations (range, 1 to 38 kidneys per organization) and transplanted at the 64 U.S. transplantation centers (range, 1 to 31 kidney transplantations per center) that accepted kidneys from NHBDs. This compares to 8718 cadaveric kidneys from donors with heartbeats transplanted by the same 64 centers during the same period.[24] Survival rate at one year was 83 percent for kidney grafts from NHBDs compared with 86 percent for grafts from donors with

heartbeats (P=0.04). The survival rates were high for grafts from NHBDs despite the poorer early function of these grafts; 48 percent of the recipients required dialysis within the first week after transplantation, compared with 22 percent of the recipients of grafts from donors with heartbeats. The primary-failure rate from kidneys from NHBDs was 4 percent, as compared with 1 percent from kidneys from donors with heartbeats. The conclusion was that transplantation of kidneys from NHBDs is often successful, and the use of kidneys from such donors could increase the overall supply of cadaveric kidney transplants.[24] Similar studies from the University of Wisconsin also confirmed that extra-renal organs, such as the pancreas and liver, could also be transplanted successfully from NHBDs.[25,26] A recent report from the University of Pittsburgh Medical Center described 8 livers transplanted from controlled NHBDs, all of which functioned immediately.[27]

The ethics of NHBD have been debated extensively in the literature.[19, 8] The principles of beneficence, non-maleficence and autonomy of the potential donor are carefully weighed against the proposed benefits for the potential recipients and society. The principle of beneficence demands that every diagnostic or therapeutic procedure done prior to declaration of death must be for the benefit of the patient's survival, care and comfort. Organ donation takes a distant secondary consideration until death has occurred. Furthermore, the principle of non-maleficence demands that, above all, we must do no harm to the patient. Thus any medications, tests, or procedures used for organ donation, because of their potential, however remote, for pain, discomfort, or physiologic harm, must wait until death is declared. Finally there is the principle of autonomy, where we must preserve the dignity, rights and wishes of the patient and his family. Informed consent is crucial before any invasive procedures for donation can occur. Taken all together, in organ donation this can be summarized as the "dead donor" rule. We must not do anything to hasten the death of a patient. Death must be declared before organ donation can take place.[19]

The following ethical principles were recently summarized in a report on NHBD published by the Institute of Medicine (IOM).[19]

(1) Our society benefits from enhancing organ donation.
(2) Organ donors must be dead at organ removal.
(3) Absolute prohibition of active euthanasia.
(4) Complete openness about policies and protocols.
(5) Commitment to informed consent.
(6) Respect for donor and family wishes.

In our case report, controlled NHBD was performed successfully using standard medical and ethical guidelines. With this initial experience, hopefully more NHBDs can be performed in the near future, thereby providing a potential increase of 25 percent of kidneys for patients in Hawaii.[8] Preliminary protocols for NHBD are currently being drafted by the Organ Donor Center of Hawaii, using the recommendations by the IOM. (See Table 2) After much thought and planning, with public input (including the views of patient and donor families), a written protocol can be further developed and approved by an appropriate local overseeing organization.

Table 2.— Recommendations of the Institute of Medicine for national policy on Non-heart-beating organ donation

1. Written, locally approved non-heart beating donor (NHBD) protocols.
2. Public openness of NHBD protocols.
3. Case by case decisions on anticoagulants and vasodilators.
4. Family consent for premortem cannulation.
5. Conflict of interest safeguards — separate times and personnel for important decisions.
6. Determination of death in controlled NHBDs by cessation of cardiopulmonary function for at least 5 minutes by electrocardiographic and arterial pressure monitoring.
7. Family options (e.g., attendance at life support withdrawal) and financial protection.

References

1. Cheung AHS, Wheeler MS, Fan FL, et al. 25 years of kidney transplantation in Hawaii. *Hawaii Medical Journal*, 1994; 53: 64-68.
2. Moreno-Cabral CE, Nakaahiki JH. Cardiac transplantation in Hawaii. *Hawaii Medical Journal*, 1994; 53: 80-84.
3. Wong LL, Cheung AHS, Limm WML, et al. Liver transplantation in Hawaii. *Hawaii Medical Journal*, 1994; 53: 86-89.
4. Cheung AHS, Limm WML, Wong LL. Pancreas transplantation for diabetic patients in Hawaii. *Hawaii Medical Journal*, 1994; 53: 90-93.
5. Wong LMF, Fan FL, Limm, WML, Cheung AHS, Wong LL, Moreno-Cabral, CE. (1998). What s new in Hawaiian medical care-transplantation. *The Straub Proceedings* 1998; 621: 93-4
6. Wheeler MS, Cheung AHS. Minority attitudes toward organ donation. *Critical Care Nurse*. 1996; 16:1; 30-35.
7. Wheeler MS, O Friel, M, Cheung AHS. Cultural beliefs of Asian-Americans as barriers to organ donation. *J Transplant Coordination*. 1994;4: 84-7.
8. Abouna GM. Marginal donors: A viable solution for organ shortage. *Transplantation Proceedings* 1997; 29: 2759-64.
9. Alexander JW, Zola JC. Expanding the donor pool: Use of marginal donors for solid organ transplantation. *Clinical Transplantation*. 1997; 10: 1-19.
10. Daemen JHC, Oomen A, Kelders W, Kootstra G. The potential pool of non-heart-beating kidney donors. *Clinical Transplantation*. 1997; 11. 149-154.
11. Garcia V. Financial and legislative issues. *Transplantation Proceedings*. 1997; 29: 3256
12. Kauffman HM, Bennett LE, McBride MA, Ellison MD. (1997). The expanded donor. *Transplantation reviews*. 1997; 11;4: 165-190.
13. Orr RD, Gundry, SR, Bailey L. Reanimation: Overcoming objections and obstacles to organ retrieval from non-heart-beating cadaver donors. *J Medical Ethics*. 199 7-11.
14. Ota K, Fuchinoue S, Nakamura M, Tokumoto T, Tanabe K, Tom, H. Transplantation of kidneys donated from the USA: long term results and viability testing using 31P-MRS. *Transplantation International*. 1997; 10: 7-12
15. Younger S, Arnold R. Ethical, psychosocial, and public policy implications of procuring organs from non-heart beating cadaver donors. *JAMA*. 1993; 269; 21: 2769-74.
16. DeVita MA. Organ donation from non-heart-beating donors 94. *Procuring organs for transplant*. The Johns Hopkins University Press, Baltimore, 1995.
17. University of Pittsburgh Medical Center Policy and Procedure Manual. *Kennedy Institute of Ethics Journal*, 1995; 3; 2: A1-A15, 1993.
18. DeVita MA, Snyder JV, Grenvik A. History of organ donation by patients with cardiac death. Introduction. *Procuring Organs for Transplant*. The Johns Hopkins University Press. Baltimore, 1995.
19. Herdman R, Potts J. Non-heart beating organ transplantation: Medical and ethical issues in procurement. Division of Health Care Service, Institute of Medicine. *National Academy Press*, Washington, D.C., 1997.
20. Nakamura N, Casey KM, Jones JE. Organ donation relationship between US military hospitals and Japanese organ network. *Transplantation Proceedings*. 1997; 29; 8: 3220-2.
21. Takagi H. Organ transplantations in Japan and Asian countries. *Transplantation Proceedings*. 1997; 29; 8: 3199-3202.
22. D Alessandro AM, Hoffmann RM, Belzer FO. Non-heart-beating donors: One response to the organ shortage. *Transplantation Reviews*. 1995; 9; 4: 168-176.
23. Kootstra G. The asystolic, or non-heartbeating, donor. *Transplantation*. 1997; 63; 7: 917-21.
24. Cho YW, Terasaki PI, Cecka SM, et al. Transplantation of kidneys from donors whose hearts have stopped beating. *The New England Journal of Medicine*. 338(4), 221-225,1998.
25. D Alessandro AM, Hoffman RM, Knechtle, SJ et al. Controlled non-heart-beating donors: A potential source of extrarenal organs. *Transplantation Proceedings*. 1995(a); 27; 1: 707-709.
26. D Alessandro AM, Hoffman RM, Knechtle SJ, et al. Successful extrarenal transplantation from non-heart beating donors. *Transplantation*. 1995(b); 59;7: 977-982.
27. Casavilla A, Ramirez C, Shapiro R, et al. Experience with liver and kidney allografts from non-heart-beating donors. *Transplantation Proceedings*. 1995; 27; 5: 2898.
28. Arnold RM, Youngner SJ, Schapiro R, et al (Ed) The debate over non-heart-beating cadaver protocols. *Procuring organs for transplant*. The Johns Hopkins University Press, Baltimore, 1995.

Our pledge to you

As Straub physicians, we welcome your referrals... and pledge to:

- Report our evaluation to you promptly by phone, fax or mail (whatever you prefer).
- Never make secondary referrals without your approval.
- Always direct the patient back to you for continuing care.

To make your referrals easy, we have a Physician Referral Specialist, Kym Kaohi. To contact Kym and to get a binder on Straub specialists and services, call 522-4444.





For assistance, call Kym at 522-4444

Straub
Partners in health
straubhealth.com

Malpractice Risk Assessment Among Different Approaches For Informed Consent

Renee L. Sato, Medical Student, Loren G. Yamamoto MD, MPH, MBA, and Gaylyn G. Li MD

Abstract

Introduction: The standards for obtaining informed consent, set forth by the Hawaii Revised Statutes, establish that it is the physician's duty to disclose what a reasonable person objectively needs to hear in order to make an informed decision. It is the purpose of this study to report the opinions of medical malpractice attorneys to survey their opinion whether full or limited disclosure of alternative treatments in informed consent is viewed as having a lower malpractice risk.

Methods: Hawaii medical malpractice attorneys viewed a compilation of arguments for and against both full and limited disclosure, and completed an opinion survey after reading samples of disclosure statements in two different case scenarios: 1) a pediatric emergency department case involving a febrile child at risk for occult bacteremia, and 2) an obstetrics case involving a woman with a postdate pregnancy.

Results: A vast majority of respondents believe that, in general and in the obstetrics case, full disclosure results in less liability. In the pediatrics ED case, 46% chose full disclosure as having less liability, 38% believe that the same liability exists with both full and limited disclosure, and 15% believe that limited disclosure is associated with less liability in this case.

Conclusions: Hawaii attorneys with medical malpractice experience overwhelmingly agree that, in general, full disclosure is associated will less medical legal liability. Full disclosure was also the option selected as associated with less liability by a majority of attorneys in a sample obstetrical case. Opinions were more diverse in the pediatrics ED case. Many attorneys stressed that judging the risk of liability in general is difficult, and should be done on a case by case basis.

Introduction

Throughout much of the history of medicine, the authority to make medical decisions rested solely with the physician. This paternalism was justified by two factors, 1) the belief that patients did not have the ability to fully understand the complexities of medical decision-making, and 2) the physician has a duty to protect the patient from serious harm.[1] Although these factors are still valid, it is now considered unacceptable for the physician to make medical decisions without obtaining informed consent from the patient[2]. In *Schloendorff v. New York Hospital* (1914), Justice Cardozo wrote, "Every human being of adult years and sound of mind has a right to determine what shall be done with his own body"[3] This opinion has been supported by medical literature[4-7] and court decisions.[7] In 1983, Hawaii State law regarding standards of informed consent was written as follows, in the Hawaii Revised Statutes §671-3(b)[8]:

> "If the standards established by the board of medical examiners include provisions which are designed to reasonably inform a patient, or patient's guardian, of:
> 1) The condition being treated;
> 2) The nature and character of the proposed treatment or surgical procedure;
> 3) The anticipated results;
> 4) The recognized possible alternative forms of treatment; and
> 5) The recognized serious possible risks, complications, and anticipated benefits involved in the treatment or surgical procedure, and in the recognized possible alternative forms of treatment, including nontreatment,
>
> then the standards shall be admissible as evidence of the standard of care required of health care providers."

On the topic of informed consent, §671-3 HRS states that standards must be designed to "*reasonably inform* a patient or patient's guardian." Further, it specifies that the provider must inform a patient of the "recognized possible alternative forms of treatment; and the recognized serious possible risks, complications, and anticipated benefits involved..." Physicians are not required to inform a patient of all treatments, all risks, and all benefits of each, but are required to disclose "what a reasonable patient needs to hear from his or her physician in order for the patient to make an informed and intelligent decision regarding the course of treatment or surgery."[9,10,11] The intention of the law was not only to protect patient autonomy, but also to establish "a defense to the action" for physicians, thereby lessening liability[12] (i.e. a physician who complied with the requirements set forth in the statute could present this evidence at a malpractice trial as proof that he or she had complied with the standard of care). The difficulty with the statute arises from the ambiguity of the term "reasonably inform". It is logical to assume that nearly every person believes that he or she is reasonable, thereby transforming the reasonable person standard to an individual person standard – the physician must tell each individual what that person subjectively needs to know in order to make an informed decision. A proposed solution to the ambiguity of the reasonable person standard is for the physician to provide full disclosure to all patients.

Correspondence to:
Loren Yamamoto, MD, MPH
1319 Punahou Street, #718
Honolulu, HI 96826
Phone: (808)983-8387
Fax: (808)949-4232
E-Mail: Loreny@hawaii.edu

In theory, full disclosure should completely protect the physician from any liability stemming from a patient's claim of lack of informed consent. However, some studies have found that when presented with more information, and a greater variety of options, some patients choose options that may not be in their best medical interest[13]. In a recent study involving febrile children at risk for occult bacteremia, in 81% of cases, parents opted for no tests and no treatment if the physician made no recommendations (left the decision up to the parents). Published survey results of a hypothetical case scenario involving a 6-week old febrile infant reveal that, when given a choice, parents often opted for fewer tests and less treatment[14]. These studies demonstrate that when presented with more information, parents often choose the less aggressive option, even if that choice subjects their children to greater risk. It is unclear whether fully involving patients in medical decisions (i.e. fully informed consent) may subject the physician to greater risk of liability. Common arguments for and against full disclosure and limited disclosure are summarized in Table 1.

Table 1.— Medical arguments comparing limited and full disclosure

Arguments for limited disclosure

1. Patients do not have the ability to fully understand the complexities of the medical decision making process.
2. This is a medical decision which should be made by medical professionals and patients should not be making this decision.
3. Patients do not want to make medical decisions. This is why they seek the expertise of physicians to make this decision for them.

Arguments against limited disclosure

1. This is a high liability situation, since if a bad outcome occurs, it will be argued that the physician failed to adequately disclose the availability of other medical management options which the patient may have preferred.
2. This approach fails to respect patient autonomy and is inconsistent with currently accepted doctrines of informed consent which must include the disclosure of alternative medical management options.

Arguments for full disclosure

1. Patients prefer to be informed of all the medical options even if they have difficulty fully understanding the complexities of the decision making process.
2. Patients prefer to be involved (have the right of choice or veto) in medical decision making.
3. Physicians are responsible for the patient's comprehension of their medical care.
4. This approach respects patient autonomy and is consistent with currently accepted doctrines of informed consent which must include the disclosure of alternative medical management options.

Arguments against full disclosure

1. This takes too much time; more time than a physician realistically has. An in depth discussion of all the medical options for some medical conditions may take 30 minutes to 2 hours depending on the depth of understanding desired and the previous educational background of the patient.
2. Patients may have several conflicting goals. They may avoid the benefits of a certain choice because of an irrational fear of some of the other aspects of this choice. Physicians fear that providing information about rare and unexpected risks may cause patients to refuse medical care which is most likely to be beneficial.
3. This is a high liability situation, since if a bad outcome occurs, it will be argued that the doctor let the patient (who is not a medical professional) choose the medical management option. The patient will argue that he/she is not a medical professional and thus, is incapable of truly understanding everything about all the medical management options.

It is the purpose of this report to determine whether, in practice, full disclosure or limited disclosure is associated with a higher risk of liability, by drawing on the expertise of Hawaii attorneys with experience in medical malpractice cases.

Methods

A pediatrician drafted an "Emergency Department Pediatric Case" for this survey. This scenario involves the case of a 14-month-old female child presenting to the ED with a fever of 40° C and a suspected viral infection. Full and limited disclosure explanations of the child's condition were presented exactly as would be explained to the child's parents. The limited disclosure explanation included a succinct discussion of the child's medical condition and possible complications, but only included the doctor's recommendation for treatment with the mention that other treatment options exist. The full disclosure explanation included a detailed explanation of the child's medical condition, including percentage risks of even minor complications, all treatments options and the advantages and disadvantages of each option.

An obstetrician drafted an "Obstetrical Case" for this survey. This scenario involves a 23-year-old primiparous female presenting to the labor and delivery unit at 41-1/2 weeks with weak contractions and a cervical condition unfavorable for delivery. Full and limited disclosure explanations were presented exactly as would be explained to the patient. The limited disclosure explanation included a discussion of the options for labor induction and the mention that the patient has the option of being discharged home to await the spontaneous progression of labor. The full disclosure explanation included a more detailed explanation of the risks and benefits of inducing labor, a discussion of each drug used including side effects, and mentions the option of a cesarean section, which is not recommended.

A list of 53 attorneys with experience in medical malpractice law was compiled from phone book listings and from the working knowledge of a medical malpractice paralegal. Surveys were delivered to each attorney's office with a cover letter explaining the purpose of the study. Attorneys were asked to read the introductory summary, which provided background information on the problem of informed consent in medicine, and a summary of medical arguments comparing limited and full disclosure. The terms 'Limited Disclosure' and 'Full Disclosure' were defined in this section. A discussion of legal and medical arguments was provided as optional reading. Following this section, attorneys were asked to give their opinion *in general* by checking off one of three options:

1) I believe that the limited disclosure option is associated with less medical legal liability.
2) I believe that the full disclosure option is associated with less medical legal liability.
3) I believe that the degree of medical legal liability is similar with both options, thus I have no preference.

The attorneys were then presented with the pediatric ED case and asked to give their opinion on the liability specific to the circumstances in that particular case, by selecting one of the same three options as listed above. Next, the attorneys were presented with the obstetric case and asked to give their opinion on the liability specific to the circumstances in that particular case, by selecting one of the

three options listed above. Attorneys then rated possible decision-making factors on a scale of 1 to 5 with 5 being an extremely important factor in their decision-making and 1 being not important in affecting their decision.

Results

Three surveys were undeliverable. Out of the 50 surveys delivered, the response rate was 28% (n=14). One respondent was only able to respond to part 1 of the survey, and did not complete the case-specific survey questions. The respondents had an average of 23 years of legal experience (median 25; range = 3.5-32), with an average of 16 years of experience with medical malpractice law (median 15; range = 2.5-29). 57% had practices devoted solely or primarily (>50% of caseload) to medical malpractice law. 21% devoted 25%-50% of their caseload to medical malpractice, and 21% handled medical malpractice cases as <25% of their caseload. 50% of respondents were solely or primarily defense attorneys, and 50% were solely or primarily plaintiffs' personal injury attorneys.

The results of the survey are summarized in Table 2. Table 3 presents the various decision-making factors commonly used in the assessment of liability risk and the average rating given to each factor. Explanations of each factor are presented exactly as they were provided to respondents. Respondents rated "potential for bad outcome" and "patient autonomy" as the most important factors in comparing liability risk between full and limited disclosure. Respondents who chose full disclosure in the pediatrics case did not differ in their ratings of decision-factors from those who chose limited disclosure and similar liability, by more than 0.9 points in any category (Table 4). A comparison of responses given by defense vs. plaintiffs' attorneys found no difference in recommended disclosure options (Table 5). Defense attorneys rated "potential for bad outcome" and "autonomy" higher than plaintiffs' attorneys by 0.4 and 1.0 points respectively, but these factors still received the highest ratings from both groups. "Time" was rated 1.0 point higher by defense attorneys, and was ranked 3rd in importance, while plaintiff's attorneys considered "time" as less important (Table 6). None of these differences were statistically significant.

Respondents were able to write in any other factors which were not listed, but which they felt were important factors in making their assessment. Some of the comments made by respondents included: *"An understanding of the common law of informed consent allows for both an abbreviated version and a lengthy version to satisfy the legal requirements." "Strong recommendation by treating doctor is important in full disclosure." "As a general rule, in a non-*

Table 2.— Method of disclosure with lower legal liability

	N	Full	Limited	Same
In General:	n=14	86%	0%	14%
Pediatrics ED Case:	n=13	46%	15%	38%
Obstetrics Case:	n=13	85%	0%	15%

Table 3.— Ratings of Importance of Decision-Making Factors in Determinations of Liability Assessment

n = 13	Average Rating	#Ratings (4.0-4.5)	#Ratings >4.5
Potential for Bad Outcome	3.9	3	6
Patient Autonomy	3.6	6	3
Dr./Pt. Relationship	3.0	3	2
Time Available for Explanation	2.9	2	2
Commonness of the Case	2.3	3	0
Complexity of the Explanation	2.3	2	0
Age of the Patient	1.8	2	0

*Explanations of each option as provided to respondents.

- Potential for bad outcome: The pediatric case is very unlikely to result in a bad outcome, while the obstetric case has a modest, but small potential to result in a bad outcome.
- Patient Autonomy: The limited disclosure option offers less patient autonomy and puts the physician in the role of the decision-maker more than the full disclosure option.
- The doctor/patient relationship: The pediatric case involves an emergency physician who is seeing the patient for the first time, while the obstetric case involves an obstetrician who has an ongoing established relationship with her since this obstetrician has been seeing this patient throughout her pregnancy.
- Amount of time available to explain options: Full disclosure takes more time than limited disclosure. There is less time available in the pediatric case to explain options. More time is available in the obstetric case.
- Commonness of the case: The pediatric case occurs very commonly while the obstetric case is less common.
- Complexity of the explanation: Limited disclosure offers a simpler explanation than full disclosure, and is often easier to understand. Full disclosure is more complex and involves giving the patient more information.
- Age of the patient: The pediatric case involves a child, so the parent is in charge, while the obstetric case involves an adult.

Table 4.— Comparision of decision factors for respondents in the Pediatrics ED case.

Decision Factor	Full Disclosure (n=6)	Limited Disclosure & Similar Liability (n=7)	P Value
Time Available	2.7	3.1	NS
Commonness of Case	1.8	2.7	NS
Autonomy	3.5	3.6	NS
Potential for Bad Outcome	3.7	4.1	NS
Age of the Patient	2.2	1.6	NS
Dr/Pt Relationship	2.5	3.4	NS
Complexity of Explanation	2.0	2.6	NS

Table 5.— Comparison of preferred options by attorney specialty

	Primarily or Solely Defense		Primarily or Solely Plaintiff/Personal Injury	
	Full	Limited & Same	Full	Limited & Same
In General (n=14)	6 (43%)	1 (7%)	6 (43%)	1 (7%)
Pediatrics ED Case (n=13)	3 (23%)	3 (23%)	3 (23%)	4 (31%)
Obstetrics Case (n=13)	5 (38%)	1 (8%)	6 (46%)	1 (8%)

Table 6.— Comparision of decision factors by attorney specialty

n=13	Primarily or Solely Defense	Primarily or Solely Plaintiff/Personal Injury	P Value
Time Available	3.4	2.4	NS
Commonness of Case	2.0	2.6	NS
Autonomy	4.1	3.1	NS
Potential for Bad Outcome	4.1	3.7	NS
Age of the Patient	1.6	2.1	NS
Dr/Pt Relationship	3.2	2.9	NS
Complexity of Explanation	2.3	2.4	NS

emergency situation, more disclosure probably exposes a doctor to less liability." "Full disclosure, by definition, is less likely to result in liability for lack of informed consent." "If a private medical doctor fails to appreciate the severity of a problem...[the mistake] cannot be passed off to the patient by telling the patient what the options are...and then asking the patient to select from the menu of options." "Generally it is easier to defend a case when there has been a full disclosure, assuming you can prove that."

Two attorneys mentioned the recommendation of an expert physician as an important factor in informed consent cases, especially in full disclosure where the patient is presented with a wider variety of options. One respondent wrote that how closely the physician's disclosure matches the criteria set forth in the Hawaii Revised Statutes and recent case law is an extremely important factor. Other factors mentioned were the urgency of the situation and the ability to prove what was disclosed.

Discussion

Our results demonstrate that, based on the experiences of medical malpractice attorneys, full disclosure is the option associated with less liability in general. The possibility that the wording of the arguments, used for and against limited and full disclosure, may have been biased, is acknowledged. The arguments were compiled by researchers with medical backgrounds and may have been biased towards supporting the choice favored by medical personnel. Although not proven conclusively by scientific study, many medical personnel seem to favor limited disclosure because of the time involved in full disclosure explanations, the difficulty in ensuring that the patient fully understands everything that is involved, and the fear that the patient will select an option different from what is medically recommended. No respondents chose limited disclosure as the choice associated with less liability in general. This pattern of responses matches our expectation that attorneys would, in general, believe that greater disclosure of information lessens the risk of liability.

The obstetrical and pediatric cases were presented in order to give respondents a sample of what limited disclosure and full disclosure explanations would entail. It is possible to believe that full disclosure is associated with less liability in general, but to have a different opinion when the theory is implemented in specific actual cases. It was crucial to select cases, therefore, that provided a wide range of variable factors which might influence the type of disclosure that is provided. It is recognized that there are medical situations in which disclosure is much less of a concern. Such a case occurs with emergency situations in which there is little time to provide adequate disclosure. Disclosure is also less of a concern in cases with few options available, where one option is clearly superior, for example, most patients with appendicitis will consent to an appendectomy. Although it would have been preferable to include more scenarios with a wider variety of situational factors, due to the length of the survey and the time required for attorneys to voluntarily complete the surveys, it was not possible to do so.

The results of the obstetrical case mirror the responses for liability in general, with the vast majority of respondents choosing full disclosure as associated with less liability. The limited disclosure explanation in this case was very similar to the full disclosure explanation. It is possible that more information was provided in the limited disclosure explanation than is typically given to an obstetrical patient. This may have been a confounding factor if any of the respondents had selected the limited disclosure option because the responses may have been based on a non-representative explanation. However, even with the increased details provided in the limited disclosure explanation, respondents still chose full disclosure as the option associated with less liability.

The OB case also illustrated two key points that medical personnel are concerned with when full disclosure is given. First of all, unappealing side effects for the medications are described, increasing the probability that the patient will refuse the induction option. Secondly, a cesarean section is described as an option, although the patient is warned that there are no accepted indications for performing a cesarean at that time. Offering the patient an option that is inferior or not recommended opens up the possibility that the patient will choose that option even if it is not in her best interest. This endangers the welfare of the patient and exposes the physician to greater liability. In spite of these possibilities, the respondents still felt that full disclosure was the best option for reduced liability.

The most variation in responses was seen in the pediatrics ED case. This case, like the OB case, was presented in order to give respondents a sample of the explanations that might be given in a

real-life situation. It also contrasted with the OB case in a number of ways. Because this case takes place in an emergency department, less time is available for explanation. In all likelihood, the child is being treated by an emergency physician whom the parents have never met before, unlike the OB patient who has an established relationship with her physician over the course of her pregnancy. Since the patient is a child, medical decisions are being made by the parents, making patient autonomy somewhat less of a factor. The pediatrics case also occurs more frequently, making this situation more common than the OB case. In this pediatrics case, several respondents felt limited disclosure was associated with less liability and several felt the liability risk was the same with both options, but there was no clear explanation that could account for their responses. On the survey of decision-making factors, the respondents who selected limited disclosure or same liability gave a similar pattern of ratings as those who chose full disclosure.

This may be an indication that these respondents felt that full disclosure was associated with less liability in any situation regardless of the different variables involved in any individual situation. This case was also notable for a large contrast in the limited and full disclosure explanations. The limited disclosure explanation was very brief, consisting mainly of the physician's recommendation for tests and treatment. The full disclosure explanation was considerably longer and more detailed, with percentage risks of improbable complications, a list of all treatment options, including options not recommended, and the percentage risks and benefits of each. Although previous studies have shown that most parents are willing to digest substantial amounts of medical information in a reasonably short period of time, the degree to which they understand this information is unknown.[13] It is doubtful that a non-medically trained parent would be capable of remembering such details. It is even questionable whether such detail serves to make a decision-maker more informed or more confused. Patients often do not recall information they have discussed with their physicians; even basic information about the proposed treatment. In a study of cancer patients who had just consented to treatment, only 60% understood the purpose and nature of the treatment, only 55% could list even one complication, and only 27% could name a single alternative.[15]

It is possible that in this case the volume of information that would need to be provided for full disclosure, coupled with the fact that the patient is in the emergency department, may have played a factor in influencing respondents' opinions. One recognized exception for obtaining informed consent is in emergent cases, where consent is implied. This exception does not fit perfectly in this case, as the parents are present and the child is not in imminent danger of harm. There is sufficient time to discourse with the parents and attempt to enlist their preferences in their child's treatment. However, in general, emergency cases do provide justification for more paternalistic action on the part of physicians than is normally acceptable in non-emergent situations.

Of the factors involved in decision-making, respondents rated "age" as the lowest in importance and "autonomy" as the second highest, indicating that preserving a patient's decision-making authority is still a strong consideration, even if the patient does not have any autonomy because of their age. Complexity of the explanation" was rated as low in importance. As one respondent pointed out, "although limited disclosure is easier to understand, it is also easier to mislead." Likewise,"commonness of the case" was rated as low in importance. A respondent commented that, "the case may be common to the physician, but it is probably not common to the patient." "Potential for bad outcome" was rated the most important factor, as expected. It was also expected that the higher ratings for "potential for bad outcome" would correspond to a greater recommendation for full disclosure. This was not seen in the pediatrics ED case, where half of respondents chose limited disclosure or same liability, despite rating "potential for bad outcome" the highest of all factors, probably because the actual potential for a bad outcome in this case is very low.

A final comparison of options preferred by attorneys with differing specialties showed that there was no difference in opinions provided by defense attorneys versus the opinions provided by plaintiffs' attorneys in any of the case scenarios. This demonstrates a general consensus among attorneys on what actions may expose a physician to greater liability that is independent of their plaintiff/defense inclinations.

In summary, medical malpractice attorneys chose full disclosure as the option associated with less liability in all situations, regardless of the different variables in each patient's individual situation. More variability in responses was noted in the pediatrics ED case, although it was not clearly correlated with variability in decision-factors. Finally, although many attorneys stressed that liability must be judged on a case by case basis, many of the write-in responses supported full disclosure as associated with less liability. As one attorney noted, 'if all doctors [gave full disclosure] I wouldn't have as much business.'

Acknowledgments

Thank you to the following attorneys who participated in our research study: L. Richard Fried, Jr., Esq., Mal Gillan, Esq., Mark Davis, Esq., Peter C.P. Char, Esq., Jeff Portnoy, Esq., and to all the attorneys who responded anonymously. Thanks to Joseph F. Kotowski III, paralegal, for legal research assistance and summaries of informed consent cases. Thanks to the attorneys who provided copies of recent Hawaii State Supreme Court rulings on informed consent cases.

References

1. Childress JF. Who Should Decide: Paternalism in Health Care. New York: Oxford University Press,1982. p.102.
2. Committee on Bioethics, American Academy of Pediatrics. Informed consent, parental permission, and assent in pediatric practice. *Pediatrics* 1995;95(2):314-317.
3. *Schloendorff v. New York Hospital,* 211 N.Y. 125, 127, 129 N.E. 92, 93 (1914).
4. Lidz CW, Appelbaum PS, Meisel A. Two models of implementing informed consent. *Arch Int Med* 1988; 148:1385-1389.
5. Beauchamp TL, Childress JF. Principles of Biomedical Ethics, third edition. New York: Oxford University Press; 1986.
6. Appelbaum PS, Lidz CW, Meisel A. Informed Consent: Legal Theory and Clinical Practice. New York: Oxford University Press; 1987.
7. Bussey GD. Informed consent: its legal history and impact on medicine. *Hawaii Med J* 1995; 54:472-475.
8. HRS/671-3 *am L 1983, c 223,/2 superseded by c 284,/1* .
9. *Canterbury v. Spence,* 464 F.2d 772 (D.C. Cir), *cert. Denied,* 409 U.S. 1064 (1972)
10. *Carr v. Strode,* 79 Haw. 475, 904 P.2d 489 (1995)
11. *Bernard v. Char,* 79 Hawaii 371, 903 P.2d 676 (Haw.App.1995), *cert. Granted,* 78 Hawaii 474, 896 P.2d 930 (1995)
12. Hse. Stand. Comm. Rep. No. 417-79, in 1976 House Journal, at 1459 as cited in *Keomaka v. Zazaib,* 8 Haw. App. 518 (1991)
13. Yamamoto LG. Application of Informed Consent Principles in the Emergency Department Evaluation of Febrile Children at risk for Occult Bacteremia. *Hawaii Med J* 1997(56):313-322.
14. Oppenheim PI, Sotiropoulos G, Baraff LJ. Incorporating patient preferences into practice quidelines: Management of children with fever without a source. *Ann Emerg Med* 1994;24:836-841.
15. Cassileth BR., Zupkis RV, Sutton-Smith, March V. Informed consent — Why its goals are imperfectly realized? *N Engl J Med* 1980; 302: 896-900.

Diarrhea-associated Hospitalizations among Children in Hawaii

Paul V. Effler MD, Robert C. Holman, MS, Umesh D. Parashar MBBS, MPH
and Roger I. Glass, MD, PhD

Abstract

Objective. *To estimate the burden of diarrhea-associated hospitalizations among children in Hawaii.*

Design. *Retrospective analysis of hospital discharge records.*

Patients. *Children from 1 month through 4 years of age with a diarrhea-associated diagnosis listed on the hospital discharge record in Hawaii.*

Setting. *Acute care hospitals in the state of Hawaii, 1994 through 1997.*

Results. *During 1994-1997, 2288 children (11.3% of all hospitalizations for children < 5 years of age) had a diarrhea-associated diagnosis listed at hospital discharge. The average annual incidence (per 10,000 children) of diarrhea-associated hospitalizations was 62.3; the incidence was higher for children < 1 year (101.6) than for those 1 through 4 years of age (52.7). Rates for Hawaii were lower than national rates during 1993 through 1995 (US annual rate of 89 per 10,000 children). The median length of hospital stay was 2 days for diarrhea-associated hospitalizations, and 3 days for hospitalizations specifically associated with rotavirus-related diarrhea. Diarrhea-associated hospitalizations were highest during the period December through June.*

Conclusions. *Diarrhea is an important cause of hospitalization among children in Hawaii, where approximately 1 in 32 children may be hospitalized by 5 years of age. The age-specific and temporal trends reported here are consistent with those previously described for rotavirus-associated hospitalizations, suggesting that this pathogen is a major contributor to the overall morbidity from diarrhea.*

Introduction

Diarrheal illnesses cause about 150,000 - 170,000 hospitalizations per year among US children under 5 years of age, accounting for approximately 12% of all hospitalizations in this age group.[1,2] Rotavirus is the most common pathogen detected in etiologic studies of US children hospitalized with diarrhea.[3,4] However, this pathogen is not routinely tested for in children with diarrhea because such testing adds cost without significantly altering treatment. Consequently, estimates of the morbidity from rotavirus-associated hospitalizations are not readily available. Previous studies have suggested that the unique epidemiologic features of rotavirus (i.e., winter seasonality, predisposition for children 4-35 months of age) can be used to estimate the morbidity from this pathogen by using nonspecific data on diarrhea in children.[1,2,5-9] These indicators were used in this study to estimate the morbidity associated with rotavirus diarrhea among children in Hawaii by analyzing data on diarrhea-associated hospitalizations.

Correspondence to:
Paul V. Effler MD
Hawaii Department of Health,
1250 Punchbowl St.
Honolulu, HI 96813
Tel: (808) 586-4586
Fax: (808) 586-8347

Methods

Hospital discharge data for the period 1994 through 1997 were obtained from the Hawaii Health Information Corporation (HHIC),[10] a non-profit corporation that collects discharge information from all acute care hospitals in the State of Hawaii. Patient records are processed through a comprehensive error identification and correction process, and annual hospitalization records are available for analysis within the following year.

Hospital discharge data were examined for children 1 month through 4 years of age who had an International Classification of Diseases, 9th revision, Clinical Modification (ICD-9-CM) code for diarrhea listed as one of up to 10 diagnoses on the discharge record.[11] The ICD-9-CM codes used included diarrhea of determined etiology (bacterial [001 to 005, 008.0-008.5, excluding 003.2], viral [008.6-008.8], and parasitic [006-007, excluding 006.3-006.6]) and diarrhea of undetermined etiology, including those presumed to be infectious (009.0-009.3) and noninfectious (558.9, 787.91). Rotavirus-associated hospitalizations were defined by the specific ICD-9-CM code 008.61, which was introduced in October 1992. Neonates were excluded from the analysis because the ICD-9-CM classifies diarrheal illness in these infants with distinct neonatal codes.

Data were examined for trends in hospitalizations for diarrhea and for rotavirus by age, sex, season, and etiology. Data on race were unavailable. Hospitalization rates (per 10,000 children) were calculated by using the census state population of children for the corresponding age group (<1 year, 1-4 years, and <5 years of age).[12] Risk ratios (RRs) with 95% confidence intervals (CIs) were calculated using Poisson regression analysis.[13] Hospital length of stay was compared using the Wilcoxon rank-sum test.

Results

A total of 2288 diarrhea-associated hospitalizations were reported among children 1 month through 4 years of age in Hawaii during the 4-year study period (Table 1), accounting for 11.3% of all hospitalizations among < 5-year-old children. Hospitalizations for children 1-11 months of age accounted for 32.0% of the diarrhea-associated hospitalizations for all children 1 month through 4 years old (Figure 1). Most (73.6%) diarrhea-associated hospitalizations were of unspecified etiology; of the remaining, viruses accounted for 21.4%, followed by bacteria (5.9%) and parasites (0.3%).

Table 1. Diarrhea-associated hospitalizations among children 1-59 months of age in Hawaii, by diagnostic category, 1994-1997.

Diagnostic Category *	ICD-9-CM Codes	No.	(%)
Etiology Unspecified			
Presumed infectious	009-009.3	19	(0.8)
Presumed noninfectious	558.9, 787.91	1684	(73.6)
Etiology Specified			
Viral	008.6, 008.8	489	(21.4)
Rotavirus	008.61	47	(2.1)
Bacterial†	001-005.9, 008-008.5	135	(5.9)
Cholera	001-001.9	0	(0.0)
Salmonella†	002-003.9	48	(2.1)
Shigella	004-004.9	19	(0.8)
Food poisoning	005-005.9	17	(0.7)
Escherichia coli and others	008.008.5	53	(2.3)
Parasitic‡	006-007.9	8	(0.3)
Ameba‡	006-006.9	1	(<0.1)
Other protozoa	007-007.9	7	(0.3)
Total		2288	(100)

* More than one diagnostic category (ICD-9-CM code) may be listed on each discharge record.
† Excludes localized salmonella infections (003.2).
‡ Excludes amebic liver abscess (006.3), amebic lung abscess (006.4), amebic brain abscess (006.5), and amebic skin ulceration (006.6).

Figure 1.— Diarrhea-associated hospitalizations and cumulative percent hospitalizations by age in months among children 1 month through 4 years of age in Hawaii, 1994 through 1997.

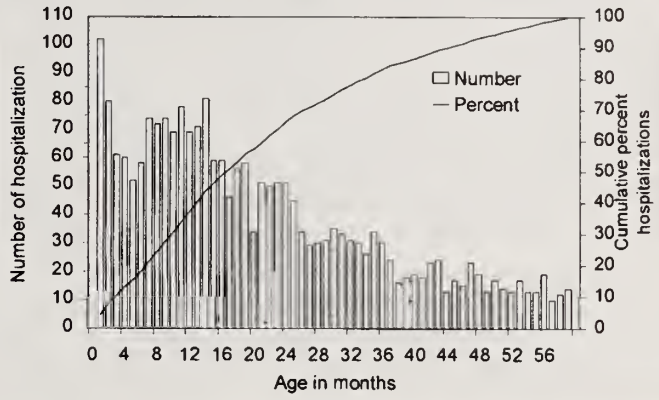
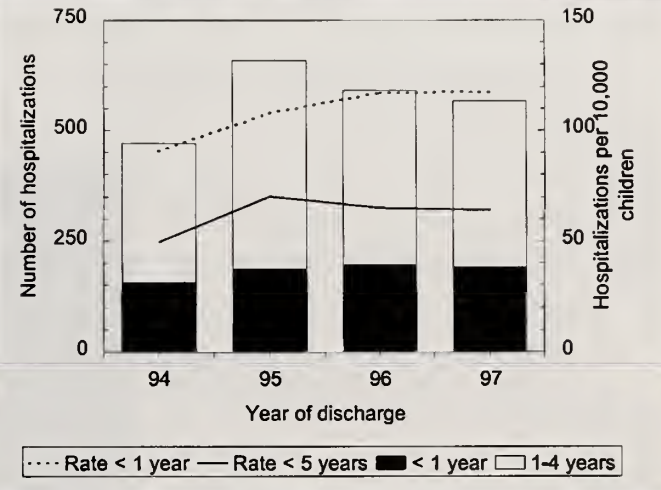


Figure 2.— Diarrhea-associated hospitalizations and hospitalization rates by year and age group among children 1 month through 4 years of age in Hawaii, 1994 through 1997.



The average annual incidence of diarrhea-associated hospitalizations among children 1 month through 4 years of age was 62.3 per 10,000. The incidence varied by year from 49.8 per 10,000 in 1994 to 70.1 per 10,000 in 1995, and no well-defined trend was observed (Figure 2). The average annual incidence was greater among infants than among children aged 1-4 years (101.6 per 10,000 [N = 733] compared with 52.7 per 10,000 [N=1555], respectively, RR = 1.9, 95% CI = 1.8 - 2.1) and among males than among females (66.7 per 10,000 [N = 1259] compared with 57.7 per 10,000 [N = 1028], respectively, RR = 1.2, 95% CI = 1.1 - 1.3). The median duration of a diarrhea-associated hospitalization was 2 days. Two deaths were reported among the 2288 hospitalizations with diarrhea.

A diagnosis of rotavirus diarrhea was coded on 2.1% (N = 47) of all discharges for diarrhea, increasing from 1.3% in 1994 after the introduction of the new rotavirus-specific ICD-9-CM code to 3.5% in 1997. The incidence of hospitalizations coded as rotavirus diarrhea was not significantly greater among infants than among children aged 1-4 years (19.4 per 10,000 [N = 14] compared with 11.2 per 10,000 [N = 33], respectively, RR = 1.7, 95% CI = 0.9 - 3.2), and was similar among males and females (14.3 per 10,000 [N = 27] compared with 11.2 per 10,000 [N = 20], respectively, RR = 1.3, 95% CI = 0.7 - 2.3). The median duration of a rotavirus-associated hospitalization was greater than that of hospitalizations for diarrhea of other etiologies (3 days compared with 2 days, respectively, $p < .001$).

Figure 3.— Monthly diarrhea-associated hospitalizations over time by age group among children 1 month through 4 years of age in Hawaii, 1994 through 1997.

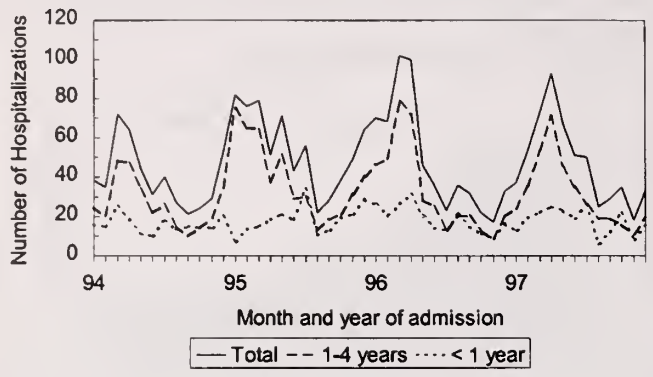
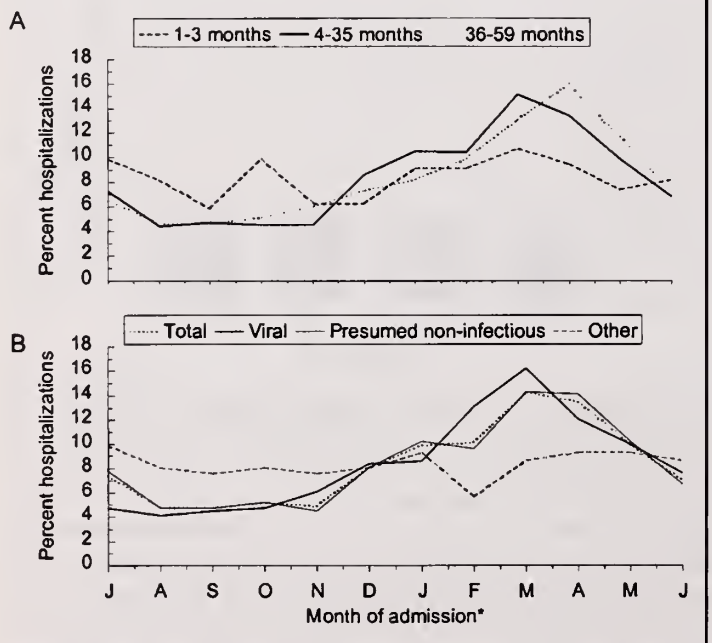


Figure 4.— Composite monthly diarrhea-associated hospitalizations among children 1 month through 4 years of age in Hawaii, by (A) age-group and (B) etiology, 1994 through 1997. The proportion of monthly hospitalizations is provided for each group separately.



* Month of admission for discharges from 1994 through 1997.

When diarrhea-associated hospitalizations were examined by month of admission, an increase was observed in the months of December through June each year (Figure 3). Examination of the composite monthly number of diarrhea-associated hospitalizations by age-group and etiology identified several trends (Figure 4). By age-group, the seasonal peak in diarrhea-associated hospitalizations was most prominent for children 4-35 and 36-59 months of age, but was not seen in children 1-3 months of age (Figure 4A). By etiology, the seasonal peak in diarrhea-associated hospitalizations was most noticeable for those of viral and presumed non-infectious etiologies and was not seen among those of other etiologies (Figure 4B).

Discussion

Diarrhea remains an important cause of morbidity among children in Hawaii. If each child is admitted for diarrhea only once, this would mean that, on average, 1 of every 32 children is hospitalized for diarrhea by the age of 5 years. The winter seasonality of diarrhea-associated hospitalizations, most prominent among children 4-59 months of age, is consistent with the epidemiologic characteristics of rotavirus and likely reflects hospitalizations caused by this pathogen. However, only a small fraction (~ 2%) of diarrhea-associated hospitalizations were coded specifically as rotavirus, possibly because of under-diagnosis and under-reporting. These findings are consistent with those of other studies based on national and state data on diarrhea-associated hospitalizations among children and demonstrate the importance of rotavirus as a cause of severe diarrhea in US children.[1,2,5-9]

While this study provides useful estimates of the morbidity from rotavirus diarrhea among children in Hawaii, it has several limitations. First, because information about outpatient visits and emergency room admissions was not examined, this study presents a limited picture of the total morbidity associated with rotavirus diarrhea among children Hawaii. Second, because data on hospitalization costs were not available, no assessment was made of the economic burden of hospitalizations associated with rotavirus diarrhea. Third, because only limited diagnosis-specific information about rotavirus diarrhea was available, the morbidity associated with rotavirus-associated hospitalizations among children in Hawaii could not accurately ascertained. A more comprehensive and accurate assessment of the disease burden of rotavirus diarrhea in Hawaii could be obtained through a network of sentinel hospitals in which every child admitted with diarrhea and a representative sample of children who visit the emergency room and outpatient clinics for a diarrheal illness is tested for rotavirus and information about the costs associated with these events is gathered.

A rotavirus vaccine that is approximately 80% efficacious against rotavirus-associated hospitalizations was licensed in 1998 for use in the United States and was recommended in 1999 for routine immunization of US infants at 2, 4, and 6 months of age.[14-18] In July 1999, the use of rotavirus vaccine in the United States was suspended because of reports of intussusception among infants who received the vaccine.[19] Studies are ongoing to evaluate the association between rotavirus vaccine and intussusception. Hospital discharge data used can be used to study the epidemiology of intussusception and other adverse events that might be associated with vaccines.

Our findings demonstrate the need for interventions against rotavirus and other causes of childhood diarrhea and indicate that hospital discharge data can be used to evaluate the effect of such interventions. In view of the suspension of use of rotavirus vaccines, health care providers should encourage parents and caretakers to use oral rehydration solutions (ORS) to prevent the development of dehydration in children with diarrhea.[20,21] Early and effective ORS use should reduce childhood diarrhea hospitalizations caused by rotavirus and other enteropathogens.

Acknowledgements

We thank John O Connor for editorial assistance, and Abtin Shahriari of CDC and Mary Cahill and Jill Miyamura of HHIC for technical assistance.

References

1. Jin S, Kilgore PK, Holman RC, Clarke MJ, Gangarosa EJ, Glass RI. Trends in hospitalizations for diarrhea in United States children from 1979-1992: estimates of the morbidity associated with rotavirus. *Pediatr Infect Dis J* 1996;15:397-404.
2. Parashar UD, Holman RC, Clarke MJ, Bresee JS, Glass RI. Hospitalizations associated with rotavirus diarrhea in the United States, 1993 through 1995: surveillance based on the new ICD-9-CM rotavirus specific diagnostic code. *J Infect Dis* 1998;177:13-17.
3. Matson DO, Estes MK. Impact of rotavirus infection at a large pediatric hospital. *J Infect Dis* 1990;162:598-604.
4. Brandt CD, Kim HW, Rodriguez JO, et al. Pediatric viral gastroenteritis during eight years of study. *J Clin Microbiol* 1983;18:71-78.
5. Glass RI, Kilgore PE, Holman RC, et al. The epidemiology of rotavirus diarrhea in the United States: surveillance and estimates of disease burden. *J Infect Dis* 1996;174:S5-11.
6. Glass RI, Lew JF, Gangarosa RE, LeBaron CW, Ho MS. Estimates of the morbidity and mortality from diarrheal diseases in American children. *J Pediatr* 1991;118:S27-33.
7. Parashar UD, Holman RC, Bresee JS, et al. Epidemiology of diarrheal disease among children enrolled in four west coast health maintenance organizations. *Pediatr Infect Dis J* 1998;17:605-611.
8. Holman RC, Parashar UD, Clarke MJ, Kaufman SF, Glass RI. Trends in diarrhea-associated hospitalizations among American Indian and Alaska Native children, 1980-1995. *Pediatrics* 1999;103:e11.
9. Parashar UD, Chung MA, Holman RC, Ryder RW, Hadler JL, Glass RI. Use of state hospital discharge data to assess the morbidity from rotavirus diarrhea and to monitor the impact of a rotavirus immunization program: A pilot study in Connecticut. *Pediatrics* 1999, 104:489-94.
10. Hawaii Health Information Corporation. Hospital inpatient data, 1994-1997. Honolulu, Hawaii; 1998.
11. Public Health Service and Health Care Financing Administration. International classification of diseases, 9th revision, Clinical modification, 6th ed. (CD-ROM), Washington: Public Health Service; 1998.
12. Bureau of Census. Intercensual estimates of the population of states by age, sex, and race: 1970-1997. Washington, DC: Bureau of Census; 1998.
13. Kleinbaum DG, Kupper LL, Muller KE, Nizam A. Applied regression analysis and other multivariable methods. New York: Duxbury Press, 1998.
14. Joensuu J, Koskenniemi E, Pang X-L, Vesikari T. A randomized, double-blind placebo controlled trial of rhesus-human reassortant rotavirus vaccine for prevention of severe rotavirus gastroenteritis. *Lancet* 1997;350:1205-1209.
15. Rennels MB, Glass RI, Dennehy PH, et al. Safety and efficacy of high-dose rhesus-human reassortant rotavirus vaccines report of the national multicenter trial. *Pediatrics* 1996;97:7-13.
16. Perez-Schael I, Guntinas MJ, Perez M, et al. Efficacy of the rhesus rotavirus-based quadrivalent vaccine in infants and young children in Venezuela. *N Engl J Med* 1997;337:1181-1187.
17. Santosham M, Moulton LH, Reid R, et al. Efficacy and safety of high-dose rhesus-human reassortant rotavirus vaccine in Native American populations. *J Pediatr* 1997;131:632-638.
18. Committee on Infectious Diseases. Prevention of rotavirus disease: guidelines for use of rotavirus vaccine. *Pediatrics* 1998;102:1483-1491.
19. Centers for Disease Control and Prevention. Intussusception among recipients of rotavirus vaccine United States, 1998-1999. Morb Mortal Wkly Rep 1999;48(27):577-581.
20. Duggan C, Santosham M, Glass RI. The management of acute diarrhea in children: oral rehydration, maintenance, and nutritional therapy. *Morb Mort Wkly Rep.* 1992;41(RR-16):1-20.
21. Mauer AM, Dweck SH, Finberg L, et al. American Academy of Pediatrics Committee on Nutrition: Use of oral fluid therapy and post-treatment feeding following enteritis in children in a developed country. *Pediatrics* 1985;75:358-361.

WHAT YOUR KIDS ARE EXPOSED TO IN CHILDHOOD WILL AFFECT THEM THE REST OF THEIR LIVES.



Studies show that damage from the sun to a child's skin can actually increase the odds that they will develop skin cancer as adults. In fact, it is estimated that 80% of a person's total lifetime sun exposure occurs in the first 18 years of life. So protect your children. Keep them out of the sun during midday. Cover them up. Give them hats. And teach them to use sunscreen. For more information, call 1-888-462-DERM, or visit www.aad.org.

AMERICAN ACADEMY OF DERMATOLOGY

News and Notes Henry N. Yokoyama MD

POTPOURRI...

DON'T SWEAT THE SMALL STUFF...

By Richard Carlson, PHD

Make Peace with Imperfections...

Let Go of the Idea that Gentle, Relaxed People Can't Be Super Achievers...

Be Aware of the Snowball Effect of Your Thinking...

Develop Your Comprehension...

Remind Yourself that When You Die, Your "In Basket" Won't be Empty...

Don't Interrupt Others or Finish Their Sentences...

Do Something Nice For Someone Else — And Don't Tell Anyone About It...

Let Others Have The Glory...

Learn To Live in the Present Moment...

Imagine that Everyone Is Enlightened Except You...

Let Others Be Right Most of the Time...

Become More Patient...

Ask Yourself the Question: "Will This Matter a Year from now!"

Surrender to the Fact that Life Isn't Fair...

Allow Yourself to be Bored...

Lower Your Tolerance to Stress...

Once a Week Write a Heartfelt Letter...

Imagine Yourself at Your Own Funeral...

POTPOURRI...

Mr. Ginsberg, age eighty-three, went to the doctor for a complete physical, head to toe.

Halfway through, the doctor was called to the phone...

He said, "Mr. Ginsberg, this will not take more than a few minutes. Here is a jar. While I am gone, go to the bathroom and place a semen sample in it for examination. Then we'll continue."

A few minutes later, the doctor returned and there stood Mr. Ginsberg with the jar — empty.

"Doctor," said Mr. Ginsberg. "I did my best. I tried with my right hand; I tried with my left hand. I even tried with both hands, but nothing happened."

The doctor said soothingly, "Now, Mr. Ginsberg, don't feel embarrassed. At your age, it is quite common to be impotent."

Whereupon Ginsberg said with towering indignation, "What do you mean, impotent? I couldn't open the jar."

Issac Asimov

BOOK REVIEW...

POISONOUS PLANTS OF PARADISE Susan Scott & Craig Thomas, MD. (First aid and medical treatment of injuries from Hawaii's Plants. (A must for any practitioner in Hawaii...) Publication date: Jul 1 2000...Price $19.95...University of Hawaii Press

PESTS OF PARADISE Susan Scott & Craig Thomas, MD. 190 pages...Published Sept 1 2000. (First aid and treatment of injuries from Hawaii's animals) Price $19.95...

Craig Thomas has practiced emergency medicine in Hawaii since 1983. He is on the clinical faculty at John Burns School of Medicine, president of the Hawaii Emergency Physicians Association, Inc. and medical director for the Honolulu Fire Dept. and the Honolulu Police Dept.

Susan Scott has written a weekly column "Ocean Watch" for the Honolulu Star Bulletin since 1987.

POTPOURRI...

Henry goes to confession and says, "Bless me, Father, for I have sinned. Last night I was with seven different women."

The priest says, "Take seven lemons, squeeze them into a glass and drink the juice."

"Will that cleanse me of my sins?"

"No," replies the priest, "But it will wipe that silly grin off your face."

Jay Trachman

At the police station, Bubba explained to the officer why his cousin shot him.

"Well," Bubba began, "we was having a good time drinking, when my cousin Roy picked up his shotgun and said, "Hey, do you fellas wanna go hunting?"

"Then what happened?" the officer interrupted.

"From what I can remember," Bubba said, "I stood up and said, 'Sure, I'm game.'"

Anton Buntic

MEDICAL TID BITS...

Going All the Way: Sigmoidoscopy misses about 1/2 the precancerous polyps spotted by colonoscopy. Folks over 50 should seriously consider colonoscopy ($1,200 - $1,500) over sigmoidoscopy ($200)...

Double Whammy: Not only do smokers die younger, but on average smokers have difficultly with daily activities like walking, dressing and bathing for two years more than non-smokers...

Ginseng Surprise: The supplement industry in the U.S. has ballooned to $14 billion/yr...Consumer Lab, a small independent lab in White Plains N.Y. reports that some of the country's favorite health additives may be downright unhealthy.

Ginseng tops the list...Eight of the 21 brands listed contained high levels of pesticides and some even had lead.

Nearly 1/4 of the gingko brands did not contain the advertised levels of GBE (which is supposed to increase brain blood flow and improve cognition)

Half the brands of supplement glucosamine-chondroitin (used to treat arthritis) had lower than claimed chondroitin levels.

Thanks to the Dietary Supplements Health and Education Act of 1994, the FDA no longer regulates the supplement industry. Supplements don't get the premarket safety and efficiency evaluation that drugs get...

MEDICAL TID BITS...

VIAGRA: Viagra may do more than revive a flaccid love life...It may restore normal digestion in millions of diabetics with gastro paresis (which causes bloating, loss of appetite, vomiting and dehydration). Mice studies are so uplifting that human trials will be started...

Smoking and Type II Diabetes: A five-year Japanese study involving 1,266 middle-aged Japanese male smokers links cigarette smoking and Type II diabetes. Men who smoked 31 cigarettes a day were 4 times more likely to develop diabetes as non-smokers...

ONYX-015: Onyx-015 is a genetically modified cold virus used to treat head and neck cancer. In a study, 63% of 30 patients receiving Onyx-015 with chemotherapy saw their tumors shrink at least by half and after 5 months none of the tumors had recurred. Researchers hope to try Onyx-015 in ovarian, pancreatic and other aggressive tumors...

Special Delivery: Up to 40% of pregnant women harbor strep which can cause pneumonia, septicemia and even meningitis during childbirth. Screening for strep formerly took days, but now a speedier test – "Rapid PCR" takes less than an hour to detect any strep which can be wiped out with IV antibiotics before the delivery...

POTPOURRI...

A Texas rancher was bragging to the owner of a small farm in Illinois. "I can get in my car at six in the morning," he said, "drive for 6 hours, spend an hour eating lunch, drive another 6 hours and I still haven't reached the end of my property."

"Yeah," the farmer said, nodded sympathetically, "I had a car like that once."

His car was stalled in the middle of a busy street, and the woman behind him honked continuously as he tried to start it up. Finally, he got out and walked to her car.

I can't seem to get my car started," he said,

smiling..."If you'll go and start it for me, I'll stay here and lean on your horn."

MEDICAL TID BITS...

The "Chemo" Effect: A Dartmouth Medical School study indicates that chemotherapy may leave some patients with poor memories and concentration problems. Psychologist Tim Ahles found that those who got standard chemotherapy for breast cancer or lymphoma were twice as likely as those who had surgery and/or local radiation to score poorly on memory and concentration tests. The effects were present an average 10 years after treatment...

Dr. William Wood, chairman of the Dept. of Surgery at Atlantic Emory University notes that patients with early disease often opt for chemotherapy even though surgery is indicated...

Bad Mixers: Recent research suggests that Zantac (Ranitidine) causes high blood alcohol levels even with light to moderate drinking by interfering with the breakdown process of alcohol. Study author Dr. Satish Arora and colleagues at Bronx Veterans Affairs medical Center conclude that patients on Ranitidine should be warned of the possibility of unexpected functional impairment when drinking.

MEDICAL TID BITS...

Sunny Side Up: In April, JAMA published a study which stated that eating one egg daily does not increase your risk of heart disease or stroke.

Egg or egg yolk has about 215mg of cholesterol. Researchers from Harvard, Brigham and Women's Hospital in Boston studied the egg consumption of 120,000 nurses and other health professionals with normal cholesterol levels...The researchers found no link between egg and heart disease and strokes except for diabetes...

Kidney Caution: A preliminary study suggests that elderly folks who used NSAIDS chronically may have elevated serum creatinines...

Filler 'er Up: Data on 50,000 men show that consuming ten 8oz glasses of liquid (water, coffee or soda) each day cuts the risk of bladder cancer in half. The liquids probably flush away the carcinogens.

Matters of the Heart: Among those with advanced heart failure, men survive only 1/2 as long as women. Researchers also found that coronary artery disease was more likely to lead to heart failure in men than in women...

MEDICAL TID BITS...

The symptoms of PAD (peripheral arterial disease) are: lower legs hurting after walking a few blocks; or the legs are often numb, tingling or cold...Unfortunately, few of the eight million Americans with PAD symptoms are treated, says specialist Dr. Rodney Raabe...PAD can be controlled by: stop smoking if you are a smoker; walking a mile or two daily and taking ASA or other blood thinners...

Sinusitis Culprit: About 37 million Americans suffer from chronic sinusitis. Most short-term sinusitis lasting less than a few weeks are bacterial...but the source of chronic sinusitis has been a mystery. Mayo Clinic researchers indicate that chronic sinusitis may be caused by immune response to fungus in the mucous. Researchers are exploring the development of antifungal medication...

POTPOURRI...

Q: What is a chicken teriyaki?
A: The name of the only living Japanese kamikaze pilot...

Issac Asimov

A man called the phone company to complain about his listing in the directory.

"I told you my last name is SWEADY," he said, "but you have it listed as OYIRWU."

"I'm sorry sir," the phone company rep said. "I'll fix it so it'll be correct for the next directory. Can you spell your name?"

"Just like I told you before," the customer said. "It's S as in SEXY, W as in WHY, E as in EYE, A as in ARE, D as in DOUBLE-U and Y as in YOU."

R.V. Canby

"May I try on that dress in the window?" the gorgeous young woman asks the manager of the designer boutique.

"Go ahead," the manager replies, "Maybe it'll attract some business."

Harry Buck

ROSS HAGINO'S LEGACY...
Prayer by Calvin Sia

Dear Lord, we are gathered here with Ross's family and close friends to honor Ross, a loving, caring and dedicated husband, father, good friend and pediatrician.

We each hold many fond memories of his warm friendship and will always remember him with loving thoughts.

Bless this food that we are about to partake, as we remember him and all of his favorite foods.

Amen.

FUNERAL NOTICE...

This is my obituary. I wish no funeral services for I am already on my next journey. I arrived quietly and I depart quietly. To my family, friends and colleagues, I wish you well. I would wish to be thought of as a good man. If I have achieved anything during my life, I am most proud of having helped raise our children whom I love, to be contributing members of our society. They are my two sons, Drs. Owen and Ryan and my schoolteacher daughter, Mrs. Meri Okano. I thank my beloved wife for acceding to my funeral wishes...

(Ross Y. Hagino, MD passed away Jul 19, 2000 at home at the age of 76...)


PHOTO PARADE / EDDIE ADAMS

HELP PUT A SMILE ON MY FACE

LET'S FIND CURES FOR NEUROMUSCULAR DISEASES.

MDA®

MUSCULAR DYSTROPHY ASSOCIATION

(800) 572-1717

People know Pueblo for its...



Snazzy Web Site?
(www.pueblo.gsa.gov)



Famous
Hot Salsa?

In Pueblo, the free government information is also hot. Spice up your life by dipping into the Consumer Information Center web site, www.pueblo.gsa.gov. Or calling toll-free 1-888-8 PUEBLO to order the free Catalog. Sorry, salsa not available through our web site or Catalog.

U.S. General Services Administration

The Hawaii Medical Association's website address is: www.hma-assn.org

Nurses the of Healthcare

Registered Nurses, Licensed Practical Nurses, Medical Assistants
Qualified and experienced in a wide variety of job settings.

All applicants carefully screened and matched to your specific job.

We are fully responsible for payroll, taxes, benefits and insurance.

Kahu Malama Nurses, Inc.

Short & Long Term Staff Relief and Permanent Placement

Serving Hawaii since 1982 — *Available 24 hours*

(808) 951-0111 Fax: 949-3834 — **Inter-island: 1-800-773-9021**

e-mail: nurses@kahumalama.com

Space JAM?

Lots of important files? No more room? Don't let a few dollars keep you frustrated.

SAFE AND CLEAN ENVIRONMENT TO STORE ALL YOUR DOCUMENTS!
"EZ" hours - Open 7 Days a week!
(One of the best in town - truly an EZ Access.)

FREE! FIRST MONTH* Any Size Locker

*Some restrictions may apply.

BBB MEMBER HAWAII

Call Now For FREE TRUCK & DRIVER!

VISA MasterCard



EZ-ACCESS STORAGE SYSTEMS

HAWAII'S LEADING SELF STORAGE FOR OVER 20 YEARS!

CENTRAL AREA
(near Ward Ave.)
Close to Waikiki, Ala Moana & Downtown.
592-0220

NORTH KING AREA
(in Kalihi)
Close to Freeway, Kam Heights & Salt Lake.
832-0450

Arleen D. Jouxson, Esq.
Attorney at Law



A.K.A. Arlene Meyers, MD, MPH

- **Wahiawa pediatrician since 1979**
- **Associate Clinical Professor, JABSOM**
- **1998 Roscoe Pound award winner in health care law**
- **President & founder of the Hawaii Coalition For Health**

NEED HELP?

- **with Par. Agreements?**
- **Understanding health care laws?**
- **Resolving disputes with health insurers?**

CALL 621-8806 (Oahu) for more information or for a free initial consultation at your place of business.

302 California Ave., #209, Wahiawa, HI 96786, Ph: 621-8806; Fax: 622-5599



Classified Notices

To place a classified notice:

HMA members.—Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.

Nonmembers.—Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Office Space

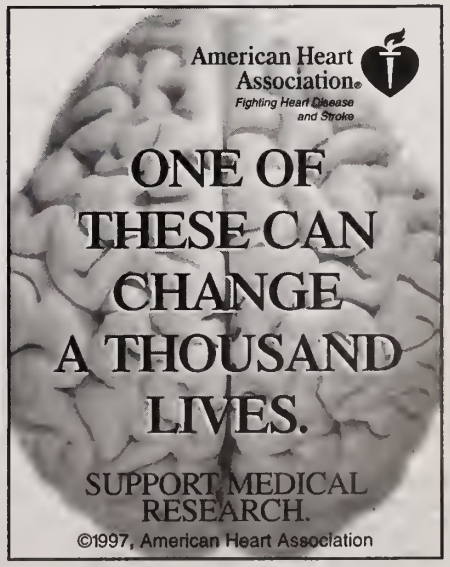
ALA MOANA BLDG.— PHYSICIANS WANTED to share space and support services. Interest in physical rehab. preferred. We have flexible rental arrangements starting at one half-day per week . Run your practice with no fixed overhead. Contact Dr. Speers, REHABILITATION ASSOCIATES, 955-7244.

MEDICAL OFFICE SPACE AVAILABLE.— ST. FRANCIS-WEST (EWA BEACH). 2000+ sq. ft., fully furnished. Reasonable monthly rent, long term lease available. If interested, call 486-4144.

Wanted

PSYCHIATRIST.— Kaneohe residential Program for adolescents seeks consultant two half-days per month. Schedule, duties, compensation negotiable. Contact Administrator: RAINBOW HOUSE 239-2399.

KAUAI.— Seeking a full-time BC/BE Neurologist for neurology center on the garden island. Interests in movement disorders and/or epilepsy welcomed. Kauai Medical Clinic is a sixty-physician multispecialty clinic affiliated with Wilcox Health System's 181 -bed community hospital. This outstanding opportunity offers excellent quality of life in a safe, beautiful, family oriented, rural community. Competitive salary, benefits, and relocation package. **Send/fax CV to M. Keyes-Sakai, Kauai Medical Clinic, 3-3420 Kuhio Hwy., Ste. B, Lihue, HI 96766-1098; fax (808) 246-1625; E-mail: mkeyes-saiki@wilcoxhealth.org.**



The Weathervane Russell T. Stodd MD

How many nurses are needed to make an injection? We don't know yet. They are waiting on a part.
Health care workers agree that just after injection when the needle is withdrawn is the most dangerous time for injury from a needle stick; a not rare event for eye surgeons. Now, 15 states (not Hawaii) have legislation mandating the use of safety needles, and 21 more states are considering the enactment of similar safety needle legislation. OSHA and Centers for Disease Control (CDC) have regulations requiring the use of safety engineered needle-based medical devices in government funded hospitals. A simple retraction device on the side of a syringe withdraws the needle following injection. Considering the potential for very serious illness from needle injuries, it is wise and useful to mandate such protective devices.

Not all attorneys are annoying. Some are dead or in jail.
A 46 year old attorney presented to her eye physician noting a growth on her right eye of three months duration. Her vision was 20/20 in both eyes. On examination, a 1.8 mm pterygium was noted on the right eye and a 1.2. mm invasion on the left. Her doctor instructed the patient on conservative measures of eye drops, moist compresses and ointments at bedtime for two weeks. Five days later, the patient returned stating that she did not have time to use these measures, and insisted that the pterygia be removed. Surgery was accomplished with a good result, but she complained of redness in both eyes and was given a prescription for lubricants. One year later, she returned noting redness in both eyes, and her doctor recorded a recurrence of the pterygia. He suggested possible repeat surgery and prescribed eye drops for the redness. The patient did not return, but filed a claim charging the doctor had performed unnecessary surgery, without informed consent and without exhausting other remedies. The plaintiff's attorney was highly skilled, but offered to settle for $9,999 as an "easy way out." The doctor refused, and the case went to trial where a jury returned shortly with a verdict in favor of the defendant eye surgeon. Moral: be careful in evaluating your patients who are eager for surgery, especially litigious types such as attorneys.

Many a train of thought carries no freight.
Hawaii has come out with a new confidentiality law which was distributed to all Hawaii Medical Association members this month. Read it and try to digest. Moving with escargot speed, Congress was obliged to pass a bill to safeguard medical records by August 1999. The bill is still somewhere in the planning phase. The Department of Health and Human Services was scheduled to write regulations to safeguard medical records by February 2000 - no action yet. In fairness to HHS, they published a set of tentative regulations and invited comments. What followed was an avalanche of negative responses. The proposed regs would permit providers, health plans, or "health care clearinghouses" to transmit medical records (without a patient's consent) for purposes of treatment, payment, or service to the public good. Recipients can range from billing companies to law enforcement agencies to medical researchers. The AMA came up with a loud "no-way;" because that would far exceed what patients imagine. Without federal rules, patients' records are protected only by inconsistent and often outdated state laws. However, so far, those look better than what has been proposed on a federal level.

Sign up and validate my inherent belief in your good judgement.
The Mountain Pacific Quality Health Foundation is the Professional Review Organization (PRO) for the state of Hawaii. The 3rd week in June you should have received an invitation from Medical Director John McMahon, Sr. M.D. to join this organization. The mission of the PRO is to assure that decisions regarding the quality and utilization of health care services are made by practicing peer physicians and not by non-physician employees. Practicing physicians make this PRO work, and many physician have been very active in assuring the success of projects both in hospitals and in their offices. There are no dues, and there is no requirement for membership in the Hawaii Medical Association (although that is good idea). Join, and sign up to be a peer physician as well. It is all for the best of reasons, and you are at no risk.

Any connection between utilization review and reality is coincidental.
In Kentucky, a case spotlighted the detailed medical criteria that guides the decisions of insurers and utilization review companies. A 32 year-old women was diagnosed with an extensive pre-malignant lesion of the cervix. She wanted a hysterectomy, but her insurer Humana (again!) refused to pay, saying the lesion could be removed with conization, a less radical and much cheaper procedure. They based their refusal upon the recommendation of three medical reviewers for a UR company with headquarters in California. The patient had the surgery, and paid the $14,000 hospital tab herself. She brought suit against Humana for breach of contract and bad faith. She argued that the for-profit insurer had promised to pay for medically necessary care, and the hysterectomy fit the bill. A jury agreed, and awarded $13.1 million in damages (all but $114, 000 a punitive penalty), an obvious reflection of the backlash against managed care. Evidence was presented showing that the telephone authorization and surgical review departments had financial incentive to restrict utilization. Also, the jury was informed that the director didn't have a medical license in Kentucky.

I refuse to spend my life worrying about what I eat.
At last there is a useful reference providing scientific scrutiny of "natural" medicines. Edited by Jeff Jellin et.al., "Natural Medicines Comprehensive Database," subjects 964 natural substances to current standards of scientific evaluation. Only 46 are considered effective and 72 likely effective. Efficacy is supported by at least two randomized, prospective, controlled, adequately large human studies that give positive results for clinically relevant end-points plus publication in an established refereed journal. Overall, only 15% of natural products have been proved safe and only 11% effective or likely effective for the indication for which they are being promoted. For those who wish, the database is easily navigated through the web page at http://www.naturaldatabase.com.

Blessed are they who seek mediocrity for they shall be fulfilled.
The World Health Organization has released its evaluation of health care and decided that the USA is 37th of 191 nations evaluated. The "top" five are all socialized, France, Italy, San Marino, Andorra and Malta. No wonder, the parameters are based upon rankings devised by socialists, and include universal access, equal level of health across the populace, fairness of financial contribution (who pays), and responsiveness (how well the system performs - USA was number one in this category). WHO admits that with socialized care, it may be necessary and efficient to ration services. Also, stated is that when services are provided for all, not all services can be provided. Despite the low ranking, Americans are more satisfied with their health care than patients in other countries. Moreover, the rich and famous from all over the world travel to the U.S. for their bypass or transplant surgery. What is not mentioned is that France, like Canada and the United Kingdom, is facing overuse of "free" health care, long waiting lists for critical procedures, and high tax rates to pay for the system. The WHO report also notes that defects in the socialized systems have brought "greater emphasis on individual choice and responsibility," which sounds very much like a recognition of egalitarian failure.

Money is better than poverty if only for financial reasons.
Further evidence (if that was necessary) that HCFA is underpaying medical bills, is that HMOs are quitting the business of serving Medicare patients. Industry officials claim that more than 711,000 people will be dropped, and now the biggest, Aetna's U.S. Healthcare, is pulling out of 11 states. Delegates at the recent AMA House meeting emphasized the difficulties encountered by many physicians and groups. The projected federal budget surplus is being hotly pursued by a range of health care providers, and Delegates stated that it should be used to increase the amount paid to physicians under the Medicare fee schedule.

ADDENDA
- ❖ Hong Kong police have seized 9,200 Viagra tablets from incoming passengers, and increased the smuggling fine to $500/tablet. Now that's a little stiff.
- ❖ A fool and his money were lucky to get together in the first place.

Aloha and keep the faith —rts■

Contents of this column do not necessarily reflect the opinion or position of the Hawaii Ophthalmological Society. Editorial comment is strictly that of the writer.

One of a kind.



Unmistakable.

At MIEC, we know what it means to stand out in the crowd. Twenty-five years ago, we started the West's first doctor-owned, not-for-profit malpractice insurance company. The idea quickly caught on, and now there are dozens of "doctor-owned" companies throughout the country.

But there is only one MIEC. Our rate and dividend history is unparalleled. Guess that's why we don't need a large sales or marketing staff. Our track record speaks for itself.

The original is still the best. Call us.

Medical Insurance Exchange of California
6250 Claremont Avenue, Oakland, California 94618
Telephone 800-227-4527 www.miec.com
HAWAII CLAIMS OFFICE: 1360 South Beretania Street, Honolulu, Hawaii 96814

Our 25th Anniversary, 1975–2000

Sponsored by Hawaii Medical Association



PSORCON® e
(diflorasone diacetate cream) 0.05%
(diflorasone diacetate ointment) 0.05%

BENZAMYCIN® Topical Gel
(3% erythromycin, 5% benzoyl peroxide)

Klaron®
(sodium sulfacetamide lotion) 10%

Hawaii medical journal
v. 59
no. 9
September 2000
Received on: 10-13-2000
Brown University Library
SCI

DERMIK

Innovation that makes a world of difference

Our Mission: To become a global leader in providing innovative dermatological products to patients and healthcare providers.

To learn more, call 1.610.454.8110, or visit our site on the World Wide Web at http://www.dermik.com

Platinum Benefactor

Honor Society

Dermik Laboratories supports research in skin care through a grant to the Dermatology Foundation

DERMIK LABORATORIES, INC.

Dedicated to Dermatology™

A RHÔNE-POULENC RORER COMPANY

HAWAII MEDICAL JOURNAL

October 2000 Volume 59, No. 10 ISSN: 0017-8594



MIXED ADC 967
Serials Dept
Sciences Library
Box 1
Brown University
Providence, RI 02912-0001

You Call That Involvement?

Some plans promise you a voice.
HMSA delivers

As a nonprofit mutual benefit society,
HMSA looks to leaders from all areas of our community
to help guide our Association. Our volunteer board of directors
is made up of people from the community, business,
labor, government, the clergy and, yes, medicine.
Of our 27 directors, seven are Hawaii physicians.
As members of our board and our numerous
advisory committees, doctors are
an integral part of everything we do.

HMSA. Now that's a health plan.

HMSA

Blue Cross
Blue Shield
of Hawaii

An independent Licensee of the Blue Cross and Blue Shield Association

Choices for a Healthier Hawaii

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
Vincent S. Aoki MD, Benjamin W. Berg MD,
John Breinich MLS, Satoru Izutsu PhD,
James Lumeng MD, Douglas G. Massey MD,
Myron E. Shirasu MD, Frank L. Tabrah MD,
Alfred D. Morris MD

Journal Staff
Managing Editor: Becky Kendro
Editorial Assistant: Drake Chinen

Officers
President: James Lumeng MD
President-Elect: Philip Hellreich MD
Secretary: Gerald McKenna MD
Treasurer: Paul DeMare MD
Past President: Patricia L. Chinn MD

County Presidents
Hawaii: David Camacho MD
Honolulu: Walter K.W. Young MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Patrick Aiu MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 1999 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 376

Complete spontaneous regression of cancer: Four case reports, review of literature, and discussion of possible mechanisms involded
Walter Y.M. Chang MD, FACS 379

The Relationship Between Type of Antidepressant and Neurovegetative Symptoms in Adult Unipolar Nonpsychotic Depression: An Opinion Survey
Jonathan K. Shepard PhD, Elaine M. Heiby PhD, Julie A. Holmes BA, Igbal Ahmed MD, and Claire J Jones 389

News and Notes
Henry N. Yokoyama MD 394

Classified Notices 397

Weathervane
Russell T. Stodd MD 398



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

Bishop Museum

Built as a memorial to his wife by Charles R. Bishop the museum's first hall was bu ilt in 1889-1890.

Editorial

Norman Goldstein MD
Editor, Hawaii Medical Journal

Report to the Hawaii Medical Association Annual Meeting

Our Journal was first published in September 1941. Harry L. Arnold, Jr., M.D. served as the first Editor – for 41 years. Following Harry were Doris R. Jasinski, M.D. and the late J.I. Frederick Reppun, M.D.

When Fred asked if I would take over as Editor in January 1994, he advised, nay warned, that it would be a lot of work. He was right! Despite the time involved, it has provided an opportunity to review many interesting, some unusual, and occasionally controversial manuscripts. With the help of our Peer Review Panel including more than 200 members of the Hawaii Medical Association, the Editor's tasks are lightened significantly.

During the last twelve months were six Special Issues:

- A memorial to Thomas J. Whelan, Jr., M.D. (November 1999)
- Issues in Current Healthcare and Reports from the American College of Physicians and the American Society of Internal Medicine/Hawaii Chapter (February 2000)
- The long-awaited Journal on Pain (March 2000)
- A trilogy of issues from the Third Pacific Vascular Symposium on Venous Diseases (April, May and June 2000)

My sincere appreciation to News Editor Henry Yokoyama, M.D. and Russell Stodd, M.D., author of the "Weathervane", for their excellent contributions. Keep them coming, Henry and Russ.

Thank also to Doctors Ann Catts, Drake Will, and Al Morris for their help with manuscript editing. Our advertising representative, Michael Roth, keeps us in the black; our Managing Editor, Becky Kendro, and Editorial Assistant, Drake Chinen, keep us on time. Cover artist Dietrich Varez keeps us looking good.

On to the next millennium.

WE COLLECT PAST DUE ACCOUNTS

Only 25%* fee for Health Care Firms!

Why give up more!

Wood & Tait

HI Collection & Detective Agency
Staff on Kauai, Oahu, Maui, & Hawaii
http://www.woodtait.com

739-0433

jwood@woodtait.com

*Applies to accounts assigned during this promotion; no restrictions as to dollar size or age of accounts. Fee will increase to 50% if litigation or forwarding required; you will receive a contract.

Aloha Laboratories, Inc.
...When results count

CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

David M. Amberger, M.D.
Laboratory Director

Phone:(808) 842-6600
Fax: (808) 848-0663
E-mail: results@alohalabs.com
http://www.alohalabs.com

Space JAM?

Lots of important files? No more room? Don't let a few dollars keep you frustrated.

FREE! FIRST MONTH* Any Size Locker

*Some restrictions may apply

SAFE AND CLEAN ENVIRONMENT TO STORE ALL YOUR DOCUMENTS!
"EZ" hours - Open 7 Days a week!
(One of the best in town - truly an EZ Access.)

BBB MEMBER HAWAII

Call Now For FREE TRUCK & DRIVER!

EZ-ACCESS STORAGE SYSTEMS

HAWAII'S LEADING SELF STORAGE FOR OVER 20 YEARS!

CENTRAL AREA (near Ward Ave.) Close to Waikiki, Ala Moana & Downtown. 592-0220

NORTH KING AREA (in Kalihi) Close to Freeway, Kam Heights & Salt Lake. 832-0450

Our pledge to you

As Straub physicians, we welcome your referrals... and pledge to:

- Report our evaluation to you promptly by phone, fax or mail (whatever you prefer).
- Never make secondary referrals without your approval.
- Always direct the patient back to you for continuing care.

To make your referrals easy, we have a Physician Referral Specialist, Kym Kaohi. To contact Kym and to get a binder on Straub specialists and services, call 522-4444.

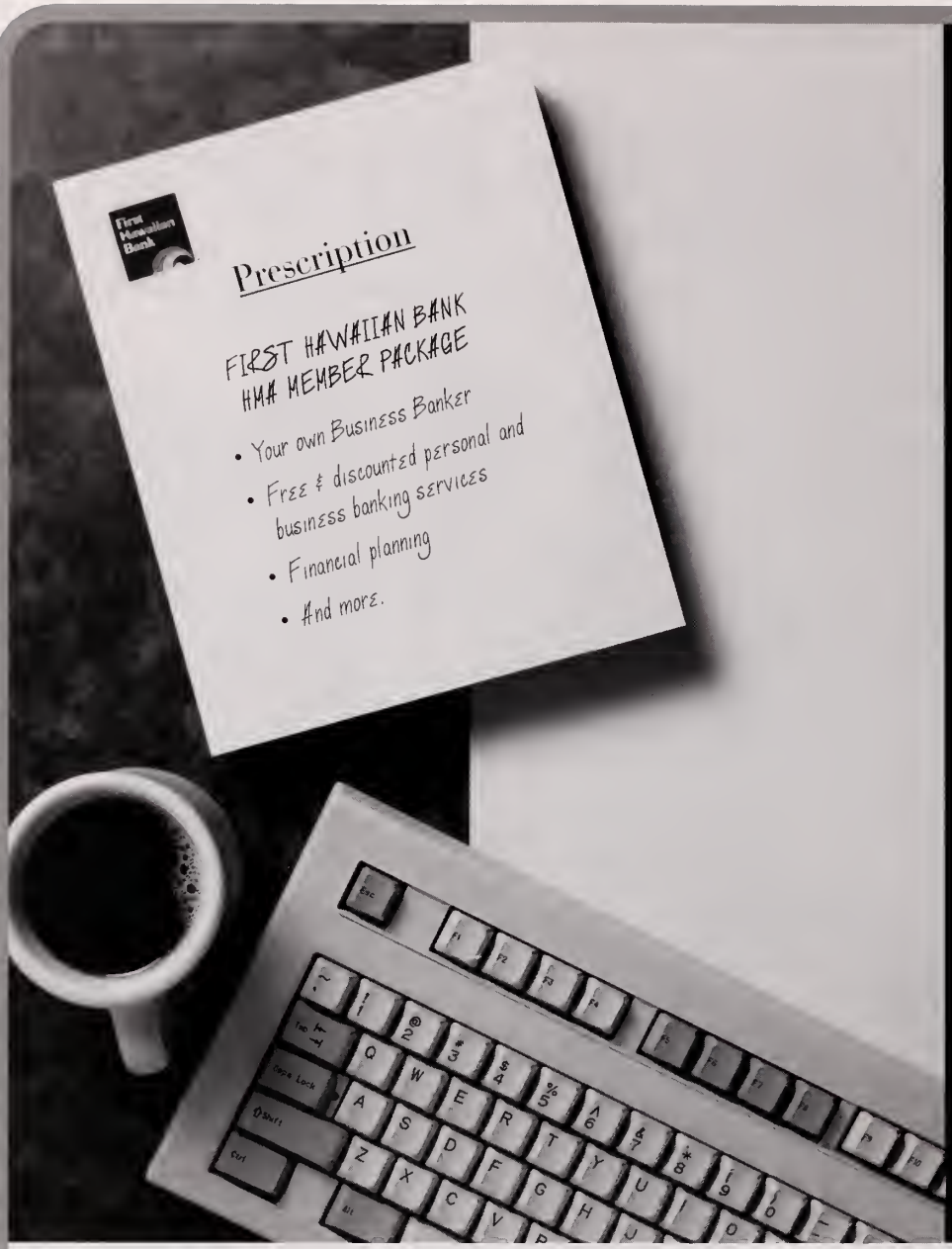


KYM KAOHI, MA • PHYSICIAN REFERRAL SPECIALIST



For assistance, call Kym at 522-4444

Straub
Partners in health
straubhealth.com



Your prescription for financial health.

Extra banking benefits for HMA members.

First Hawaiian Bank has the prescription for HMA members. It includes free and discounted personal and business banking services, discounted mortgage loan fees, reduced rates on business loans, free consultation and reduced fees on financial planning, and a Business Banker to help you with it all. It's exactly what you need to keep your finances in excellent health. If you're an HMA member, sign up by calling 525-6262 (or call collect from the neighbor islands).

First Hawaiian Bank®

THE power OF yes.

EQUAL HOUSING LENDER Member FDIC www.fhb.com

Complete spontaneous regression of cancer: Four case reports, review of literature, and discussion of possible mechanisms involved

Walter Y.M. Chang, MD, FACS

Abstract

Spontaneous regression or remission (SR) of cancers has been defined as the disappearance of the malignancies without any treatment or with obviously inadequate treatment. Four case reports are presented. These include a case of pleomorphic liposarcoma with bilateral lung metastases, a case of recurrent squamous cell carcinoma of the esophagus following esophagectomy a year earlier, a case of a squamous cell carcinoma of the scalp, and a case of a ruptured hepatocellular carcinoma with an emergency right hepatic lobectomy but with some gross cancer remaining in the left hepatic lobe.

The literature of SR of cancers was reviewed and various mechanisms possibly involved in the disappearance of the cancers were discussed. Although immune modulation has been stated to be the most likely process causing SR, other mechanisms, such as genetic therapy, withdrawal of carcinogens, infection, fever and vaccine roles, apoptosis, antibody, antiangiogenesis and maturation mechanisms, withdrawal of therapy, natural killer activity, endocrine, hormonal, and pregnancy factors, and prayers or psychoneuro-religious participation were also mentioned. Induction and inhibition of malignant protein expression and repair of gene damage may prove to be the more important processes in cancer regression.

It was also pointed out that the pulmonary metastases of the liposarcoma and the recurrent squamous cell carcinoma of the esophagus may be the very first cases of their kind to be described and that it is rare indeed to find 4 cases of SR's in a solo practice.

Finally, it is likely that SR is rarer than previously believed and that the incidence may be one in every 140,000 cases of cancer rather the one per 60,000 to 100,000 cancer cases as earlier thought.

Introduction

Spontaneous regression or remission (SR) of cancers has been defined by Everson and Cole[1] as the complete or partial, permanent or temporary disappearance of all or at least a significant portion of a well diagnosed malignant tumor in the absence of all treatment or in the presence of therapy which is considered inadequate to exert a significant influence on the neoplastic disease. Remissions are supposed to last at least one month and should not just be the waxing and waning of stable disease. This definition of SR is considered unequivocal for cancer regression with no medical therapy, treatment failure, or therapy known to be failures.

Correspondence to:
Walter Y.M. Chang MD, FACS
2228 Liliha St., #406
Honolulu, HI 96817

The true incidence of SR is unknown, but Cole[2] has estimated that probably it occurs in no more than once in 60,000 to 100,000 people with cancer. After a review of a large number of cases, Cole was able to document only 176 cases from 1900-1964. Lymphomas and leukemias were not counted. Therefore, if one SR occurs, on an average, in about 80,000 persons with cancer, it would require a single surgeon working about 30 years and seeing about 10,000 cases of cancer a year, before he would find 4 spontaneous regressions. But if only one SR occurs in 140,000 cancerous cases, a surgeon would need to see nearly 19,000 cases of cancer a year for 30 years, or a total of 570,000 cancer cases, before he would find 4 cases of SR.

Nearly two thirds to three fourths of all SR's occurred in just a few types of cancers. Furthermore, most soft tissue sarcomas occurred earlier this past century and have been difficult to find in recent literature. Even with the extensive review by Everson and Cole,[1] only eleven cases of soft tissue sarcomas with SR were recorded. None were pleomorphic or dedifferentiated liposarcomas.

After a current check of more than 1200 citations and references in a literature search, it was hard to find any cases of regression of metastatic pleomorphic liposarcoma to the lungs and of recurrent squamous cell carcinoma of the esophagus. There was a case of spontaneous remission of lung metastases from an esophageal primary but the primary esophageal lesion did not regress except only partially.[100] Furthermore, SR also seemed to occur much less frequently than previously thought and was found to occur at a rate of 1 per 140,000 cases of cancer.

Because of the extreme rarity of finding 4 cases of SR in a solo practice of a surgeon and because the patients with metastatic pleomorphic liposarcoma and recurrent esophageal squamous cell carcinoma may be the first cases of their kind to be reported, this paper is being presented with the 4 case reports, review of the literature, and a discussion of possible mechanisms involved in SR.

First Case Report

Mrs. A. T., 69-year-old part-Hawaiian and part-Caucasian woman, noted a 3.0 cm rounded, tender mass in the left gluteal area after a fall in late 1996. X-rays and sonograms showed a homogeneous soft tissue density, 5.0 x 5.2 cm, with well-defined margins in the left gluteal region suggestive of a hematoma. The lesion slowly increased in size and, therefore, surgical consultation was sought in December 1997. Except for the left gluteal mass, her physical examination was unremarkable.

MRI study of the left gluteal region showed an 8.0 cm soft tissue

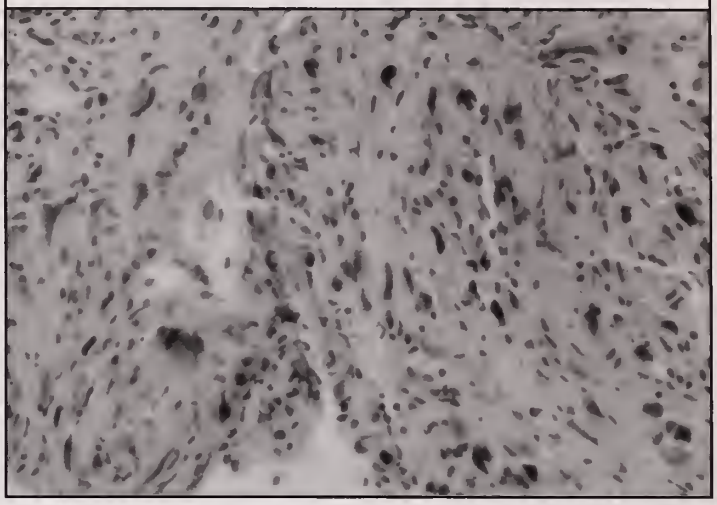
mass involving the fat overlying the left gluteus maximus muscle without definite invasion of muscle. Excision biopsy of the lump was done on 01/09/98. With the exception of transient atrial fibrillation, she did well. The histological examination of the 12.0 cm x 7.0 cm lesion showed a high-grade pleomorphic liposarcoma. A surgical margin was focally involved. Subsequently, wide radical re-excision, including portions of the left gluteus maximus muscle, was carried out. Pathology examination revealed no evidence of residual sarcoma. She was seen in consultation by a medical oncologist and a radiation therapist. The latter subsequently delivered 6,480 rads to the left gluteal area.

Because of some necrosis involving the edges of incision, these areas were excised on 01/24/98. During the course of her therapy, studies revealed a lower left neck mass which required a left thyroid lobectomy on 02/25/98. Pathological examination noted an occult papillary carcinoma, 0.1 cm in greatest microscopic dimension without capsular or surgical margin involvement, associated with a multinodular goiter.

On 03/03/98, a large left hip seroma was drained by the insertion of two Jackson-Pratt drains. After the drains became plugged, the seroma reaccumulated, requiring frequent aspirations-drainage. Because of the persistent recurrence of the seroma, 250 mg of Doxycycline liquid was injected into the cavity in an attempt to sclerose the area and allow adherence of the walls of the cavity. But this caused the injection site to become necrotic and an area 1.0 cm in size to blackened. An eschar developed at the site. Furthermore, the seroma persisted.

On 09/03/98, chest x-ray showed a 3.0 cm mass in the anterior segment of the upper lobe of the right lung, a 1.0 cm mass in the lower lobe of the left lung, and a 3.0 to 4.0 cm mass in the left hilum (Fig 1a). CT scan of the chest, on 09/10/98, confirmed the presence of these masses.

Figure 2a. Slide shows pleomorphic liposarcoma from biopsy of left hilar metastasis.



MRI studies of the left gluteal region on 09/16/98 showed only post-operative changes of the subcutaneous tissue. There was an encapsulated fluid collection or seroma in the operative site.

On 09/17/98, a CT guided needle biopsy of the left hilar mass was done. Pathological studies revealed malignant neoplasm, consistent with metastasis from the previously resected high-grade sarcoma of the left gluteal area (Fig 2a).

Before any new therapy could be given for the metastases to the lungs, another chest x-ray on 10/02/98 showed a decrease in the size of the pulmonary and left hilar metastases. Subsequent chest x-rays on 11/02/98 and 12/02/98 showed further regression of the lung and the hilar metastases. A CT scan of the chest on 05/14/99 and a chest

Figure 1a. Chest x-ray shows metastases to lungs.



Figure 1b. Chest x-ray shows complete regression of metastases.



x-ray on 05/23/99 (Fig 1b) and on 08/02/99 revealed complete regression of all the metastases with no treatment at all.

On 08/11/99, excision of the left hip irradiated tissues, the eschar or necrotic injection site, and the pseudocapsule of the serous cavity were excised. Advancement of skin flaps were done for closure. Chest x-rays on 08/07/00 continued to show no evidence of metastases.

Comment

The evidence for spontaneous regression in this case is convincing. Histologically proven lung metastases disappeared with no therapy at all.

Second Case Report

Mr. M. S., a 57 year old Japanese man, had a near total gastrectomy, omentectomy, splenectomy, resection of the distal one third of the pancreas, jejunojejunostomy, and a feeding jejunostomy on 02/11/83 for a moderately well differentiated adenocarcinoma of the stomach superficially invading the underlying muscular layer. On 03/03/83, he had drainage of a left subphrenic abscess. Subsequently, he did well.

On 05/09/89, on a routine follow-up esophagogastroduodenoscopy, a 3.0 cm reddened area in the lower esophagus, 2.0 to 3.0 cm above the esophagogastric junction, was biopsied. The pathology report was squamous cell carcinoma of the lower esophagus. On 05/15/89, the patient underwent a resection of his gastric remnant and the distal third of his esophagus. An end-to-side esophagojejunostomy, side to side jejunojejunostomy and a feeding tube jejunostomy were also done.

Post-operatively, on 05/25/89, a gastrografin swallow showed a leak of the esophagojejunostomy site with communication to the left pleura space. On the same day, a tube was placed in the left chest to drain the empyema. During the placement of the chest tube, the patient aspirated some gastric contents and developed pneumonia. On 06/07/89, a tracheostomy was done. The chest tube was discontinued subsequently when the patient recovered. The final pathology report showed moderately well differentiated squamous cell carcinoma of the distal esophagus invading the submucosa but not involving the muscularis.

On 05/24/90, a year later, endoscopic biopsy of a 1.0 cm lesion at the esophagojejunal junction revealed recurrent squamous cell carcinoma. Five pathologists in three different hospitals in Honolulu, Hawaii, concurred that the patient had recurrent squamous cell carcinoma (Fig 2b). Consultants recommended further resection or radiation of the carcinomatous area. However, before any further therapy could be started, another endoscopy with biopsy done on 05/31/90 showed only severe inflammation. Repeated endoscopic biopsies done yearly from 1990 until 1998 did not reveal any recurrent squamous cell carcinoma. His last endoscopy and biopsy on 09/07/99 also showed no recurrent carcinoma and only a mild chronic inflammation of the esophagojejunal junction. He has remained free from his recurrent carcinoma without any treatment for at least 9 years.

Comment

Endoscopic biopsies were done a week apart in this case. The 05/24/90 biopsy showed recurrent squamous cell carcinoma while the 05/31/90 biopsy showed only inflammation. When subsequent endoscopies and biopsies showed no cancer, the original slides were reviewed and re-reviewed by three different pathologists at St. Francis hospital, by a Dr. H.N., from Queen's Hospital who wrote a formal consultation confirming the recurrent cancer, and by a Dr. G.S. from Kuakini Hospital at a presentation during a tumor conference. All agreed that there was recurrent squamous cell carcinoma of the esophagus.

While regression in squamous cell carcinoma in the esophagus is unusual and this may be the first reported case of SR in a recurrent esophagus cancer, remission in a week would be rare, but there have been other cases of other cancers that have regressed rapidly. SR is, after all, a remarkable phenomenon. Why it should even occur is certainly unknown.

Third Case Report

Mrs. M. K., an 87-year-old Chinese woman was seen on 08/11/95 because of two large necrotic lesions on her forehead and scalp. The one on the forehead was ulcerated, 2.0 x 4.0 cm in diameter, and

Figure 2b. Slide shows recurrent squamous cell carcinoma of the esophagus.

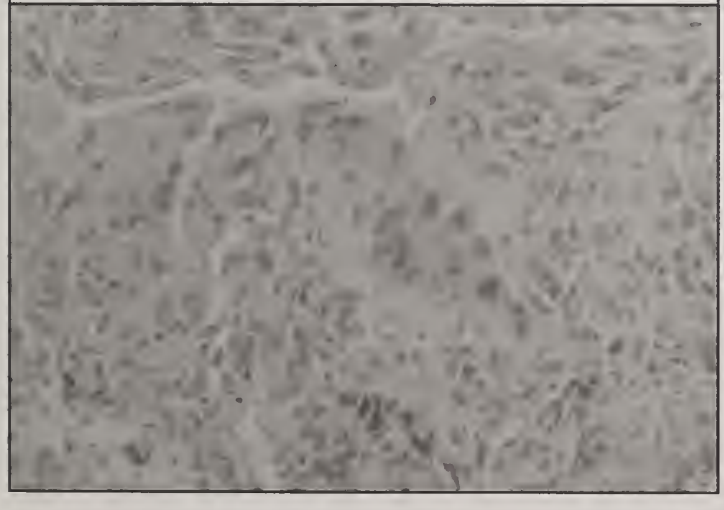
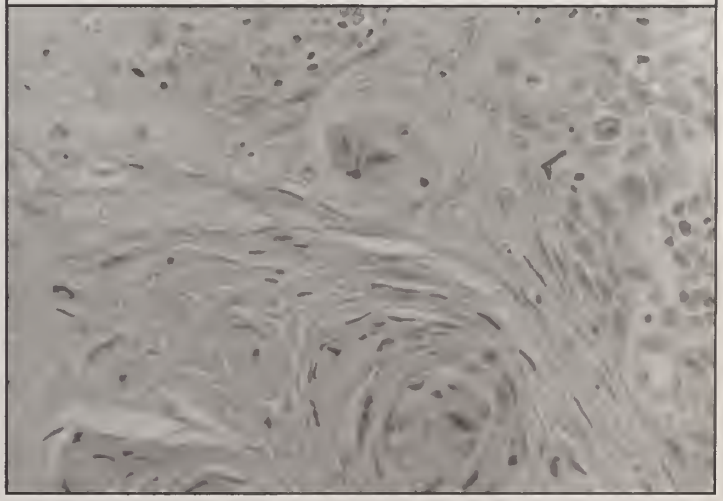


Figure 2c. Slide shows squamous cell carcinoma of the scalp.



umbilicated. On the vertex of the scalp was another similar 6.0 x 8.0 cm lesion that seemed infected. Past medical history revealed hypertension, end-stage renal disease, left ventricular hypertrophy, congestive heart failure, previous staphylococcus sepsis, gastric ulcers, altered mental status, pancytopenia, and multiple thrombectomies of clotted Gore Tex grafts required for hemodialysis.

On 09/08/95, an excision of the 4.0-cm ulcerated lesion on the forehead was done. Undermining of the scalp with a rotation flap graft was performed to close the defect. Biopsies of the larger 8.0 cm lesion on the vertex of her scalp were taken. Both areas were diagnosed as squamous cell carcinomas of the scalp (Fig. 2c). She was seen by a radiotherapist for treatment of the larger squamous cell carcinoma involving the vertex of the scalp. However, because the patient was uncooperative, no radiation or further treatment was initiated.

On 01/29/96, about 5 months later, the scalp lesion started to disappear. The areas that were once ulcerated, necrotic, and crusted now seemed smoother although somewhat reddened. By early May 1996, the squamous cell lesions of the scalp had completely and spontaneously regressed without any treatment. The scalp now looked normal without any redness. She remained free of cancer without any treatment until 12/14/98, when at age 91 years, she expired from staphylococcus aureus sepsis.

Comment

Although no repeat biopsy was done during the three years of remission, the scalp of this patient, from early May, 1996, was completely normal to physical examination and to all observers. It would have been excessive to have done a biopsy to prove that the normal skin was normal. Besides, the family was reluctant to even bring the patient to the office for follow-up as there no longer was any abnormality on her scalp. It would have been very difficult to justify another biopsy since even an office visit was considered unnecessary by her family.

Fourth Case Study

Mr. J. C., a 53 year old Chinese man from Tahiti, was seen on 04/14/70 because of an enlarging mass in his right upper abdomen. Examination, at that time, suggested a hepatocellular carcinoma. His past medical history revealed a Billroth II gastrectomy for a large benign gastric ulcer and cirrhosis of the liver in August of 1966.

Just prior to his scheduled laparotomy, he became hypotensive and was rushed into surgery. A large ruptured hepatocellular carcinoma in the right lobe of his cirrhotic liver was uncovered. Hemoperitoneum was evident. The cancer extended into the medial segment of the left lobe of the liver. Because of the emergency nature of the operation, the hypotension, and the cirrhosis of the liver, only a rapid right hepatic lobectomy was done. Gross cancer was left in the left lobe of the liver. Recovery was fortunately rapid and the patient was discharged on 04/21/70, 7 days after surgery.

Subsequently, he was given 5-fluorouracil weekly for a month but, because the patient wanted to return to Tahiti, further chemotherapy was not given. He, however, survived for 21 years more without any known definitive therapy. The patient was last examined in May 1987, in Honolulu, at which time, he was found free of cancer. He survived 21 years and died on 02/02/91 in Tahiti with no evidence of recurrence of his hepatocellular carcinoma. The cause of his death was stated to be a stroke.

Comment

The pathological examination revealed the right lobe of the liver with a large ruptured hepatocellular carcinoma. The cancer had extended to and had involved the resected margin. Gross cancer was noted at the margins of resection on the specimen and on histological examination. At surgery, the cancer had invaded the left lobe of the liver. There were also nodules of cancer present in the left liver. Though cancer was left in the margin and elsewhere in the left lobe of the liver, this patient survived 21 more years without further treatment.

Review of literature and discussion of possible mechanisms involved in spontaneous regression of cancer.

Incidence

In a recent literature search for reports of complete spontaneous regressions of cancer, more than 1200 citations and references were secured. These involved papers from the 1970's until the present. In addition, a large number of articles and books published before 1970 were also reviewed. The largest number of references involved instances of SR in leukemias[4,5,6,7,8,9] and lymphomas.[10,11,12,13,14,15]

Because of the inconsistency and variability of the SR's in the leukemias and lymphomas,[2,13] Everson and Cole[1] chose not to include them in their description of the 176 cases of SR found between 1900 and 1964. Why leukemias and lymphomas display this inconsistent and variable behavior is unknown. Why they should form such a relatively large group so as to consist of more than 50% of the reports of SR is also unknown.

Besides the 176 cases found between 1900 and 1964 by Everson and Cole,[1] another 188 cases of SR found between 1966 and 1985 were reported by Baker.[84] However, Challis and Stam[69] indicated that, between 1966 and 1987, there were 504 cases of SR. They included lymphomas and leukemias in their total.

A search of the literature for SR's of cancer between 1986 and 2000 revealed another 139 new cases. Partial regressions or cases not well documented or histologically proven were not included. Lymphomas, leukemias, renal cell carcinomas, and melanomas again formed the majority or 67.6%. There were 43 cases of renal cell carcinoma and 18 cases of melanoma.

If these 139 cases were added to the 176 cases of Everson and Cole found between 1900 and 1964 and the 188 cases of Baker, found between 1966 and 1985, there would be a total of 503 cases of SR last century. But if the 504 cases of Challis and Stam were to be added to the 176 cases of Everson and Cole and to the 139 new cases, there would be 819 of SR's of cancers during the past century instead.

Parkin [94] has stated that the estimate of new cancer cases for the year 1990 for every country in the world was 8.1 million. This number, however, excluded non-melanoma skin cancers. One half of the total cancers occurred in developing countries.

During 1994, 1,208,000 new cases of cancer were diagnosed in the United States.[95] In the mid 1990's hepatocellular carcinoma, probably the most common cancer in the world was estimated to be

over 1,000,000 cases yearly, and all cancer in the United States generally to be about 1,350,000 cases.[96] In Grunlee's article,[101] there was a forecast made of the number of cancer cases expected to be diagnosed in the US in the year 2000. This number was 1,220,100. Most will be lymphomas (62,300 cases) and leukemias (30,800 cases). Esophageal carcinomas will constitute 12,300 cases and soft tissue malignancies 8,100.

Roughly, the number of cancer cases in the U.S. would be 19,500,000 in the period between 1985 and 2000. This would make an estimate of about 1 case of SR for every 140,000 cases of cancer, making the number of SR's in the U.S. even rarer than originally believed by Everson and Cole[2] who wrote that SR's occurred 1 in 60,000 to 100,000 cancer cases or by Baker[84] who thought that SR probably occurred more frequently.

The next 3 cancers with frequent numbers of SR's have been renal cell carcinomas,[1,16,17,18] neuroblastomas,[19,20,21,36] and malignant melanomas.[1,22,23,24,28] They form the largest group of solid cancers known to have spontaneous regressions. Of the solid tumors, renal cell carcinomas seem to behave like leukemias with their regressions and recurrences.[16,17]

Other solid cancers with anecdotes of spontaneous regression have also been described. Although of quite rare occurrences, lung cancers,[1,27,28,32,79,80] epidermoid cancer of the bronchus,[78] hepatocellular carcinomas,[1,25,26,32] choriocarcinomas[37] bladder malignancies,[35] soft tissue and bony sarcomas,[1] prostate cancer,[32] colon and rectal cancers,[1,32] malignancies of the ovary,[32] breast,[32,34] testis,[39] uterus,[1] bladder,[32,34,37] stomach,[3,29,32] larynx,[1,32] thyroid,[1,21] tongue,[1] pancreas,[1] and esophagus,[33,100] have been described with SR's.

By comparison with the leukemias and lymphomas, the solid tumors have indeed been few and mention in recent literature of these solid cancers have been sparse. Is there a factor or factors that allow leukemias and lymphomas to spontaneously regress so much more frequently than, say, pleomorphic liposarcomas, or esophageal squamous cell carcinomas?

Possible mechanisms involved in spontaneous remission

Documented reports of complete spontaneous remissions of cancers are unusual, if not remarkable. Generally, regressions of cancers have tended to occur in lymphomas, leukemias, kidney cancers, neuroblastomas, and melanomas. There have been suggestions of "natural killing activity" in lymphomatous patients with regressions,[51] and viral or bacterial infections causing enhancement of immune systems.[88,89,90] Cytokine release and cellular immune activation causing apoptosis, differentiation of malignant tumors into benign ones, angiogenesis inhibition, genetic factors, and telomerase inhibition all have been mentioned as possible mechanisms in promoting spontaneous remissions.[23,60,93,102]

Factors that may cause or be associated with SR have been listed elsewhere also.[1,2,14,27,30,31,32,37,38] These involve modulations, modifications, manipulations or stimulations of the immune system[2,19,23,30,31,37,38,43,50,52,60] with the use of various substances as vaccines,[6,31,40,49,52] toxins,[31] interleukins and interferons.[3,44,45,46,63,64] In addition, transfusions,[5,67] enzymes,[42] gene therapy,[93] fever and infections,[5,14,15,30,42] trauma or operations,[67] endocrines or hormones or pregnancy influences,[47,53,51,81] elimination of carcinomas or irritants[67,81] maturation or differentiation,[48,81] cytotoxic or natural killer cells with lytic activity against tumor cells lines,[18,19,51,54,72] withdrawal of therapy,[55,56] psychoneuro-spiritual immunologic factors,[31,32,67,68,69,70,71] and angiogenesis therapy[66] have all been cited as playing roles in the regression of cancer.

Cytokines,[3,59,60,81] especially interleukin, appear to play an important part in tumor regression causing necrosis and apoptosis.[57,65] The latter effect can also be induced by cysteine proteases,[58] thus leading to spontaneous tumor regression in rat histiocytomas.

Immunological mechanisms:

Interleukin has been used effectively to inhibit cancer growth.[3,85] SR is thought to be the result of an efficient immune response against melanoma cells in vivo critically influenced by a complex network of interacting cytokines present.[57,83] Viral infections inducing host production of interferon with inhibition of tumor by interferon have been thought to be mechanisms for SR.[8] The normalization of OKT4/OKT8 ratio may be a factor in cancer regression as suggested by Ribera[8] and Hansen[49].

Chromosomal or genetic mechanisms:

Chromosomal or genetic abnormalities[5,6,9,10,13,14,74,75,76,81] have been evident in cancer for some time. There has been also some information indicating that chromosomal manipulation such as deletion and enzymatic blockage[74] can cause remission.

DNA damaged by radiation or tobacco smoke can result in mutations commonly found in human cancers, such as lung carcinomas. Spontaneous oxidation of guanine residues in DNA generates 8-oxoguanine (oxoG). By mispairing with adenine during replication, oxoG gives rise to a G-C to T-A transversion, a frequent somatic mutation in human cancers.

A mending enzyme called 8-oxoguanine DNA glycosylase (hOGG1) can repair the damaged DNA by catalyzing the expulsion of damaged DNA. This is accomplished by cleavage of the DNA, thus cutting away the problem part (oxoG) with chemical reactions. What is cut out is a single letter of the genetic code, one of some 3 billion letters arranged in pairs to form an estimated 100,000 genes in humans.

The protein (hOGG1), a natural antioxidant, has been noted to pocket the damaged letter known as 8-oxoguanine (oxoG) which had resulted from free radical oxidation caused by carcinogens and to repair the damage to the DNA.

What is also interesting is the observation that partial or complete loss of hOGG1 has been linked in 60-70% of all lung malignancies. In these latter cancers, one of the genes for making hOGG1 has been deleted and, in small cell carcinoma which has a dismal prognosis, there was a complete loss of hOGG1.[83]

Genetic enzymatic inhibition

Recent preliminary data[102] have indicated that an Abl tyrosine kinase inhibitor has significant activity in chronic myelogenous leukemia (CML) even in those patients that interferon therapy has not helped. The consequence of the translocation of 2 genes, resulting in the Philadelphia chromosome, is the creation of a fusion protein Bcr-Abl which directs the production of activated tyrosine kinase. The latter promotes the chaotic proliferation of white blood cells in the bone marrow.

A designed agent, labelled STI 571, has been used to inhibit the

Abl kinase in CML and has had quite impressive complete hematologic responses in Phase 1 studies.

Gene switching

One of the more recent, interesting researches involving regressions of cancers has involved the "switching off and on of cancer" in mice. By putting the antibiotic tetracycline in the drinking water of leukemia stricken mice, even advanced stages of the leukemia disappeared. But when the antibiotic-spiked water was withdrawn, the cancer returned.

The mechanisms apparently involved the 2 genes, Bcr and Abl. Fusion would occur in a process called chromosomal translocation whereby the 2 genes fused when they were out of their normal positions on chromosomes. Inside a cell, the fused genes Bcr-Abl would direct production of tyrosine kinase. This enzyme would promote a chaotic proliferation of white blood cells in the bone marrow thus resulting in leukemia.

Given the tetracycline, these mice would switch off the gene and its leukemia-producing activity. Cancer cells then would stop reproducing and would begin to die. Cancer reversal in some animals have been induced as much as three times.

Tetracycline in mice and tyrosine kinase inhibiting drugs in humans can inhibit leukemia generation but they do not eliminate the fused Bcr-Abl. If resistance to the inhibitor develops, either species will relapse with leukemia.[93]

New Approaches

New approaches which attack the molecular mechanisms by which the tumor gets its blood supply and hence its growth factors and oxygenation have been described.[104] It is quite well known that the greater the amount of vascular endothelial growth factor (VEGF) present in a cancer, the more rapid the tumor growth. VEGF, produced by a gene isolated by Genentech's Napoleone Ferrara, is critical for the production of blood vessels. Embryos with defective VEGF genes die before birth because of the failure to grow normal blood vessels, evidence for the role of VEGF as a key player.

Molecular biologists Peter Hirth and Gwen Fyfe of Sugen/ Pharmacia Corporation have tried to deactivate the receptor sites of VEGF, whereas Genentech has designed a monoclonal antibody to VEGF that slowed tumor growth in animals by preventing VEGF from docking with its receptor. These antibodies are engineered versions of natural immune system fighters that attack a particular target. Clone systems, a New York company, has also entered the fray with a designed antibody against VEGF that it hopes will be more potent than that of Genentech's. Novartis and Astra-Zeneca are also testing drugs to block VEGF.

This idea of starving tumors by antiangiogenesis has been attributed to Judah Volkman whose effort with Entremed in Rockville, Maryland, targeting angiostatin and endostatin seems less advanced than the VEGF research.

Still, VEGF blockers alone may be inadequate and, therefore, work on blocking mutant genes that avoid growth-inhibitions mechanisms and investigation on genes that may cause cell death or apoptosis are being done. Similarly, Genentech has genetically engineered Herceptin to repress HER 2 protein and to kill cancer cells.

Epidermal growth factor receptors (EGFR) is important for cancer growth.[105] Abgenix Company has manufactured a monoclonal antibody against EGFR by injecting human EGFR into mice to create antibodies. But when the mice antibodies are injected into humans, the latter correctly identifies the mice antibodies as foreign and destroys them before they can fight the cancer.

Abgenix has been able to change and disable the mice genes that make the antibodies. Human genes are then inserted into the mice. These human genes direct the production of human antibodies. The result is the Xenomouse which still recognizes the human protein as foreign, but which responds by making human antibodies acceptable to the immune system of human patients.

Adenoviruses, used to introduce p53, a tumor suppressor gene, have been studied by Introgen Therapeutics. Many cancer cases are

COMPANY	DRUGS	STAGE	ACTION
Genentech	VEGF Antibody	Final Stage Testing for lung and colon cancer	AB against VEGF protein
Pharmacia/Sugen	SU5416	Final Stage Testing for colon cancer	Drug that blocks VEGF receptor
Imclone Systems	IMC 1C11	Early Clinical Tests	AB against VEGF receptor
Astra-Zeneca	AZD6474	About to begin human testing	Drug that blocks VEGF receptor
Novartis	PTK-787	Early human tests on temporary hold	Drug that blocks VEGF receptor
Pharmacia/ Sugen	SU6668	Early human tests	Drug that blocks VEGF receptor

missing a p53 gene or have a defective p53 gene. By the introduction of a functional p53 gene, the cancer associated error in the DNA can be spotted and cell suicide or apoptosis can be triggered , thereby avoiding cancer spread.[106]

Withdrawal of Carcinogens

Elimination of carcinogens or irritants may play a role in the regression of cancers, especially if the lesion is still in the preinvasive stages.[81] Some malignancies in the bronchial epithelium have regressed with cessation of smoking. Preinvasive changes in uterine cervical cancer, leukoplakia of the mouth, and carcinoma-in-situ of the bladder or colonic polyps have also undergone regression with removal of irritant factors.

Infection, fever, and vaccine mechanisms

One of the most prominent events mentioned in many cases has been fever or sepsis.[88,89,90] Infections, fever, or even vaccinations associated with the cancer have wrought beneficial effects frequently associated with the disappearance of the cancer.[5,14,15,30,42,79] Why this happens is unknown. In most articles, some influence on the immune system is mentioned as affecting the cancer.

Apoptosis, Antibody, Antiangiogenesis and Maturation

Reasons for SR whether through apoptosis,[82] antibody formation,[7,82] antiangiogenesis,[66] maturation of the undifferentiated cells,[36] cytotoxic or killing activity in the patient's blood,[51] activation of tumor necrosis factor[61] have all been diligently studied.

Studies have suggested that interleukin-4, a cytokine produced by mast cells and T lymphocytes, can cause growth inhibition in human breast cancer cells by inducing apoptosis.[97] Programmed cell death (apoptosis) also has been correlated with an increase of a protein labeled BAX, whereas Bcl-2, another protein, has been shown to inhibit apoptsis. This can be exhibited by infecting human cancer cells with an adenovirus expressing the cancer growth suppressor gene, mda-87.[98] Apoptosis in the prostate is activated by hormone ablation and is under the control of several regulating genes including the tumor suppressor gene p53 and the proto-oncogene bcl-2.[99]

Withdrawal of therapy

Bissods and Kaczmarek[55] reported a case of SR of prostate cancer after withdrawal of diethylstilbestrol therapy. Since a significant proportion of lymphoproliferation disorders have regression of their disease after methotrexate therapy withdrawal, Salloum, *etal*[56] have suggested that this fact may have important implications in the management of lymphomas.

Natural killer activity

So-called natural killer activity has been found in the blood of patients with lymphoma,[51] renal cell cancer,[18] neuroblastoma,[19] and histocytoma.[54] How this killing activity is initiated and the mechanisms through which it works have not yet been uncovered.

Endocrine factors and hormonal and pregnancy influences

That hormones can influence breast cancer is well known.[31,34,47] The role of tamoxifen, lactation, pregnancy, estrogen, and cortisone in their influence on breast carcinomas are excellent examples of the endocrine effect.

Prayer in spontaneous regression of cancer

Recently, Harris,[68] in a randomized, controlled trial, pointed out the positive outcomes in patients admitted to the coronary care units affected by remote intercessory progress. This appeared to be a confirmation of Bryd's[73] study on the beneficial effects of intercessory prayers again in a coronary care unit population. Hirschberg and Barasch [31], in their recent book, suggested that optimistic, positive attitudes and spirituality helped in cancer cures and possibly even with SR. It would be, of course, extremely difficult to prove conclusively a connection between prayers and SR.

In a study by Berlan,[78] a large percentage of patients attributed their recovery to their prayers and to God.

In case one of this paper, the SR was attributed, by the patient, to the intercession of Father Damien.[92] Her faith and belief in the benefits of prayer led her to write to the Pope in Rome and to start the process for the canonization or sainthood of Blessed Damien when her bilateral pulmonary liposarcoma metastases all disappeared.

In case two of this paper, the patient prayed to Buddha. According to Tseng[70] and Chan,[87] prayers allowed the "chi" or vital energy to flow unrestricted from the body and allowed the mutated cancer cells to mature or differentiate and revert back to a normal state. It is unknown whether prayers were used in cases 3 and 4 of this manuscript.

Of course, the most famous story of prayers affecting cancer is that of St. Peregrine, the patron saint of cancer.[32] When the latter was a young priest, he was scheduled for an amputation because of a cancer of his leg. The night prior to his operation, he prayed fervently, dreamed that he was cured, and, on awakening, he was indeed cured. He was canonized St. Peregrine in 1726.

That prayers influenced the SR's in cases 1 and 2 described in this manuscript can be difficult, if not impossible, to prove. Mention of the connection between SR's and prayers is made as part of the discussion because of the fairly large number of writings in the review of the literature and for the completion's sake.[94]

Comment

Why SR occurred in the above 4 reported cases is unknown. Could it be the infections or inflammation or necrosis in the first 3 cases? The 4th case of the ruptured hepatocellular carcinoma and cirrhosis of the liver with the emergency right hepatic lobectomy did not have sepsis.

In the case of the metastatic pleomorphic liposarcoma, doxcycline was injected into the left hip seroma cavity. Could it be that the doxycline, an antibiotic synthetically derived from oxytetracycline, behave similarly as the tetracycline given to the leukemic mice in Huettner's experiment,[93] thereby cause a "switching off" of the liposcaroma proliferation? But the doxycycline was given 6 months before the metastases appeared.

It should be emphasized that the four cases of SR described in this article were well documented, well diagnosed, and histologically proven, and without any treatment or treated inadequately to exert a cure as in case 4 when only a emergency right hepatic lobectomy was done and gross cancer was left in the left lobe. Yet all cases

showed complete and permanent disappearance of all of the cancers. Thus, they easily met the criteria as set forth by Everson and Cole.[1]

The author also had a fifth case of a 93-year-old mother of an internist with painless obstructive jaundice due to a hard mass, presumed to be a cancer, in the head of the pancreas. Because of her age and her physical condition, only a bypass with a choledochojejunostomy-roux-en-y was done. She survived another 10 years. Unfortunately, no biopsy of the pancreas was done and thus, this case could not be included in this paper as an example of SR because of the lack of histological proof.

Finally, adherence to the title and thesis of this paper would suggest that the definition of complete spontaneous regression of cancer be modified to state that it is the disappearance of all of a well diagnosed malignancy in the absence of any treatment or in the presence of therapy considered inadequate to exert a significant influence on the neoplasm. Regressions should last at least one year.

Conclusion

Four cases of complete spontaneous regression of cancers, a review of the literature, and a discussion of various possible mechanisms involved in the disappearance of the malignancies were presented. The four very rare events of SR are interesting because of the sparsity of solid cancers with SR. The metastatic pleomorphic liposarcoma in the lungs and the recurrent squamous cell carcinoma of the esophagus may be the first case reports of their kind.

SR's may be even rarer than previously believed and the incidence may be one per 140,000 cases of cancer rather than the one per 60,000 to 100,000 cancer cases as earlier thought.

Most SR's have been associated with leukemias and lymphomas and, therefore, SR's of solid cancers are rare. The immune system of the patients with SR's may have been influenced in some way by one or more of the variously described mechanisms to enable the body to destroy the cancers. Genetic induction and suppression of cancers have recently been shown to play important roles in cancer. Although immunological processes are stated in the literature to be the most likely cause for SR, recent work has showed that genetic mechanisms may be the more important processes as shown by studies on gene damage, abnormal protein expressions and the correction or inhibition of the offending protein.

Exact pathways have not yet been delineated but various theories have been described. The mystery of SR has not yet been solved but some secrets are beginning to be unlocked.

It may be that the pathway to cancer regressions, spontaneous or otherwise, lies not in the "angel's crown which is Immunity," [103] but rather in our genes and in the inhibition, correction, and in the prevention of their abnormal expressions.

Finally the definition of complete spontaneous regression of cancer was modified to state that it is the disappearance of all of a well diagnosed malignancy in the absence of any treatment or in the presence of therapy considered inadequate to exert a significant influence of the neoplasm. Regressions should last at least one year.

References

1. Everson TC, Cole WH. Spontaneous Regression of Cancer. Philadelphia. WB Saunders. 1966.
2. Cole, WH. Efforts to explain spontaneous regression of cancer. J Surg Oncol. 1981; 17: 201-9.
3. Everson TC, Cole WH. Spontaneous Regression of Cancer. Philadelphia. WB Saunders. 1966. 338-56.
4. Lachant NA, Goldberg J, Nelson DA, Gottlieb AJ. Spontaneous remission in acute myelogenous leukemia in the adult. Am J Med 1979 Oct; 67(4): 687-92.
5. Paul R, Remas K, Lakkala T, Pelliniemi TT. Spontaneous remission in acute myeloid leukemia. Brit J Haematology. 1994; 86:210-12.
6. Ifrah N, James JM, Viguie F, Marie JP, Zittoun R. Spontaneous remission in adult acute leukemia. Cancer 1985 Sept 1; 56(5): 1187-90.
7. Buchi G, Termine G, Zappala C, etal. Spontaneous complete remission of CLL. Report of a case studied with monoclonal antibodies. Acta Haemotol 1983; 70(3): 198-201.
8. Ribera JM, Vinolas N, Urbano-Ispizua A, Gallart T, Montserrat E, Rozman C. Spontaneous complete remissions in chronic lymphocytic leukemia:report of three cases and review of the literature. Blood Cells 1987; 12(2): 471-83.
9. Musashi M, etal. Spontaneous remission in a patient with chronic myelogenous leukemia. The New England J Med. 1997 Jan 30; 336(5): 337-39.
10. Poppema S, Postma L, Brinker M, deJong B. Spontaneous regression of a small non-cleaved cell malignant lymphoma (non-Burkitt s lymphoblastic lymphoma). Morphologic, immunohistological, and immunoglobulin gene analysis. Cancer 1988 Aug 15; 62(4): 791-4.
11. Wolf JW. Prolonged spontaneous remission of case of malignant lymphoma. Mo Med 1989 May; 86(5): 275-7.
12. Grem JL, Hafez GR, Brandenburg JH. Carbone PP. Spontaneous remission in diffuse large cell lymphoma. Cancer 1986 May 15; 57(10): 2042-4.
13. Shimamoto Y, etal. Spontaneous regression in adult T-cell leukemia/lymphoma. Cancer 1993 Aug 1; 72(3): 735-40.
14. Kumamoto M, etal. Spontaneous complete regression of high grade non-Hodgkin s lymphoma. Cancer 1994 Dec 1; 74(11): 3023-28.
15. Karnad AB, Jaffar A, Lands RH. Spontaneous regression of acquired immune deficiency syndrome-related, high-grade, extranodal non-Hodgkin s lymphoma. Cancer 1992; 69: 1856-57.
16. Davis SD, Koizumi JH, Pitts WR. Spontaneous regression of pulmonary metastases from renal cell carcinoma. Urology 1989 Feb; 33(2): 141-44.
17. DeRiese, etal. Metastatic renal cell carcinoma spontaneous regression, long term survival and late recurrence. Int Urol and Neph 1991; 23(1): 13-25.
18. Vogelzang NJ, Priest ER, Borden L. Spontaneous regression of histologically proved pulmonary metastases from renal cell carcinoma: A case with 5-year follow-up. The J of Urology 1992 Oct; 148: 1247-48.
19. Ishizu H, Bove KE, Ziegler MM, Arya G. Immune-mediated regression of metastatic neuroblastoma in the liver. J Ped Surg 1994 Feb; 29(2): 155-9.
20. Carlsen NL. How frequent is spontaneous remission of neuroblastomas? Implications for screening. Br J Cancer 1990 Mar; 61(3): 441-6.
21. Eklof O, Sandstedt B, Thonell S, Abstrom L. Spontaneous regression of stage IV neuroblastoma. Acta Paediatr Scand 1983 May; 72(3): 473-6.
22. Menzies SW, McCarthy WH. Complete regression of primary cutaneous malignant melanoma. Arch Surg 1997 May; 132(5): 553-6.
23. Wagner SN, etal. Immune response against human primary malignant melanoma: a distinct cytokine mRNA profile associated with spontaneous regression. Lab Invest 1998 May; 78(5): 541-50.
24. Avinoach I, Aflolo E. Human melanoma cell lines established from metastases of a patient with a completely regressed primary site. Cancer 1992; 69:113-22.
25. van Halteren HK, Salemans JM, Peters H, Vreugdenhil G, Driessen WM. Spontaneous regression of hepatocellular carcinoma. J Hepatol 1997 Jul; 27(1): 211-5.
26. Lam KC, Ho JCI, Yeung RTT. Spontaneous regression of hepatocellular carcinoma: A case study. Cancer 1982; 50: 332-36.
27. Kappauf H, etal. Complete spontaneous remission in a patient with metastatic non-small-cell lung cancer. Case report, review of the literature, and discussion of possible biological pathways involved. Ann Oncol 1997 Oct 8; 8(10):1031-9.
28. Lowy, AD, Erickson ER. Spontaneous 19-year regression of oat cell carcinoma with scalene node metastasis. Cancer 1986; 58: 978-80.
29. Rosenberg SA, Fax E, Churchill WH. Spontaneous regression of hepatic metastases from gastric carcinoma. Cancer 1972 Feb; 29: 472-74.
30. Han T. Spontaneous remission in chronic lymphocytic leukemia: An update. Commentary Blood Cells 1987;12: 481-483.
31. Hirshberg C, Barasch MI. Remarkable Recovery. New York, NY. Riverhead Books. The Berkley Publishing Group. 1995.
32. Boyd, W. The Spontaneous Regression of Cancer. Springfield, Illinois. Charles C. Thomas, 1966.
33. Ohwada S, Miyamoto Y, Fujii T, Oyama T, Joshita T, Izuo M. Spontaneous regression of esophageal carcinoma with pulmonary metastases: case report. Jpn J Clin Oncol 1990 June; 20(2): 193-8.
34. Ross MB, Buzdar AU, Hortobagyi GN, Lukeman JM. Spontaneous regression of breast carcinoma: follow-up report and literature review. J Surg Oncol 1982 Jan; 19(1): 22-4.
35. Smith JA Jr, Herr HW. Spontaneous regression of pulmonary metastases from transition cell carcinoma. Cancer 1980 Sept 15; 46(6): 1499-1502.
36. Evans AE, Gerson J, Schnaufer L. Spontaneous regression of neuroblastoma. Natl Cancer Ins Monogr 1976 Nov; 44: 49-54.
37. Cole WH. Relationship of causative factors in spontaneous regression of cancer to immunologic factors possibly effective in cancer. J Surg Oncol 1976; 8(5): 391-411.
38. Nathanson. Spontaneous regression of malignant melanoma: a review of the literature on incidence, clinical features, and possible mechanisms. Natl Cancer Inst Monogr 1976 Nov; 44: 67-76.
39. Mueh JR, etal. Spontaneous regression of metastatic testicular carcinoma in a patient with bilateral sequential testicular tumor. Cancer. 1980 Jun 1; 45(11): 2908-12.
40. Jager E, et al. Strategies for the development of vaccines to treat breast cancer. Recent Results Cancer Res. 1998; 152: 94-102.
41. Alpaugh RK, etal. Phase IB trial for malignant melanoma using R24 monoclonal antibody, interleukin-2/alpha-interferon. Med Oncol. 1998 Sept: 15(3): 191-8.
42. Motofei I G. Herpetis viruses and spontaneous recovery in melanoma. Med Hypotheses. 1996 Aug; 47(2): 85-8.
43. Vincent F, etal. Spontaneous regression of a metastatic adenocarcinoma transmitted by a cadaver kidney graft: support for immunotherapy? Cancer Immunol Immunother. 1994 Sept; 39(3): 205-6.
44. Oliver RT etal. Unexplained spontaneous regression and alpha-interferon as treatment of metastatic renal carcinoma. Br J Urol. 1989 Feb; 63(2): 128-31.
45. Wang J, etal. Adaptive immunotherapy for stage IV renal cell carcinoma: a novel protocol utilizing periodate and interleukin-2 activated autologous leukocytes and continuous infusions of low-dose interleukin-2. Am J Med. 1987 Dec; 83(6): 1016-23.

46. Neidhart JA. Interferon therapy for the treatment of renal cancer. Cancer 1986 Apr 15; 57(8 Suppl): 1696-9.
47. Horn Y, etal. Male breast cancer: two cases with objective regressions from calusterone (7 alpha, 17 beta-dimethyltesterone) after failure of orchiectomy. Oncology. 1976; 33(4): 188-91.
48. Evans AE, Gerson J, Schnauer I. Spontaneous regression of neuroblastoma. Natl Cancer Inst Monogr 1976 Nov: 44: 49-54.
49. Hausen RM, Libnoch JA. Remission of chronic lymphocytic leukemia after small pox vaccination. Arch Int Med 1978; 138: 1137-1138.
50. Bansal SC, Bansal BR, Mark R, Rhoads JE Jr. Effect of unblocking therapy and levamisole on primary gastrointestinal tumors in rats: Immunologic and histologic correlations. J Natl Cancer Inst 1978 Nov; 61(5): 1235-54.
51. Ono K, etal. Natural killing activity in patients with spontaneous regression of malignant lymphoma. J Clin Immunol. 1996 Nov; 16(6): 334-9.
52. Lokich JJ, Garnich MB, Legg M. Intralesional immune therapy: methanol extraction residue of BCG or purified protein derivative. Oncology 1979; 36(5): 236-41.
53. Wang TS, etal. Complete spontaneous regression of pulmonary metastatic melanoma. Dermatol Surg 1998 Aug; 24(8): 915-9.
54. Bright JJ, Hegde SP, Begum Z, Khar A. Modulation of natural killer cell function leading to spontaneous regression of a histiocytoma. Cell Immunol. 1994 Mar; 154(1): 54-65.
55. Bissada NK, Kaczmarek AT. Complete remission of hormone refractory adenocarcinoma of the prostate in response to withdrawal of diethylstilbestrol. J Urol 1995 June; 153(6): 1944-5.
56. Salloum E, etal. Spontaneous regression of lymphoproliferative disorders in patients treated with methotrexate for rhematoid arthritis and other rheumatic diseases. J Clin Oncol 1996 June: 14(6): 1943-49.
57. Hegde SP, Bright JJ, Kausalya S, Khar A. AK-5 tumor-induced expression of interleukin 12: role of IL-12 in NK mediated AK-5 regression. Cell Immunol 1995 May; 162(2): 241-7.
58. Khar A, etal. Participation of CED-3/ICE and YAMA proteinases in the execution of apoptosis in AK-5 tumor cells leading to spontaneous tumor regression. Cell Immunol 1997 Aug 25; 180(1): 29-35.
59. Stadler WM, Volgelzang NJ. Cytokine therapy in metastatic renal cancer. N Engl J Med 1998 Sept 17; 339(12): 849-51.
60. Papermaster BW, Gilliland CD, McEntire JE, Smith ME, Buchok SJ. Lymphokine-mediated immuno-therapy studies in mouse tumor systems. Cancer 1980 Mar 15; 45(5): 1248-53.
61. Jimemez C, Ribera JM, Abad E, Pintos G, etal. Increased serum tumor necrosis factor during transient remission in acute leukemia. Lancet 1993 June 19; 341(8860): 1600.
62. Musto P, etal. Spontaneous remission in acute myeloid leukemia: a role for endogenous production of tumor necrosis factor and interleukin-12 Br J Haematol 1994 Aug; 87(4): 879-80.
63. Strander H, Einhorn S. Interferon in cancer: Faith, hope, and reality. Am J Clin Oncol 1982 June; (3): 297-301.
64. Gleave ME, etal. Interferon gamma-16 compared with placebo in metastatic renal-cell carcinoma. The N Eng J Med 1998 April 30; 338(18): 1265-71.
65. Kaufmann Y, etal. Brief report: Lymphoma with recurrent cycles of spontaneous remission and relapse-possible role of apoptosis. The N Eng J Med 1995 Feb 23; 332(8): 507-10.
66. Folkman, J. Antiangiogenic Therapy, Chap 64 from DeVita VT, Hellman S, Rosenberg SA Cancer: Principles and Practice of Oncology. Fifth Edition. Philadelphia. Lippincott-Raven Publishers, 1997.
67. Shapiro SL. Spontaneous regression of cancer. The Eye, Ear, Nose, and Throat Monthly 1967 October; 46: 1306-10.
68. Harris WS. etal. A randomized, controlled trial of the effects of remote, intercessory prayer on outcomes in patients admitted to the coronary care unit. Arch Intern Med 1999 Oct 25; 159: 2273-78.
69. Challis GE, Stam HJ. The spontaneous regression of cancer. A review of cases from 1900 to 1987. Acta Oncol 1990; 29(5): 545-50.
70. Tseng, David. The role of chi or the vital energy. Personal communication. Forshang Buddhism World Center-Hawaii. 1210 Ward Ave. Suite 204. Hon, HI 96814.
71. Gundersen L. Faith and healing. Ann Int Med 2000 Jan 18; 132(2); 169-72.
72. Haliks HD, etal. Apoptosis and cell cycle effects induced by extracts of the Chinese herbal preparation PC SPES. Int J Oncol 1997; 11: 437-48.
73. Byrd RC. Positive therapeutic effects of intercessory prayer in a coronary care unit population. South Med. J. 1998; 81: 826-29.
74. Narayanan NM, Lewis MJ. Spontaneous complete remission of acute myeloid leukemia with interstitial deletion of chromosome 5. Clin Lab Haematol 1991; 13(4): 391-5.
75. Hilbe W, Sill H, Eisterer W, Lin F, Bechter O, Grunewald K, Thaler J. Long-lasting haematological remission despite persistence of the Philadelphia-positive clone in an untreated chronic myeloid leukemia patient. Acta Haematol 1998, 100(2): 101-3.
76. Bhatt S, Schreck R, Graham JM, Korenberg JR, Hurvitz CG, Fischel-Ghodsian N. Transient leukemia with Trisomy 21:description of a case and review of the literature. Am J Med Genet 1995 Sep 25; 58(4): 310-4
77. Depierre A, Breton JL, Garnier G. Regression spontanée d'un cancer bronchique epidermoide. Rev Mal Resp 1984. 1: 113-17.
78. Berland W. Can the self affect the course of cancer? Advances: The J of Mind-Body Health. 1995 Fall; II(4): 5-19.
79. Margolis J, West D. Spontaneous regression of malignant disease: Report of three cases. J Amer Geriatrics Society. 1967 Mar. 15(3): 251-53.
80. Blades B, McCorkle RG Jr. A case of spontaneous regression of an untreated bronchiogenic carcinoma. J Thor Cardiovas Surg. 1954; 27: 415-19.
81. Stoll BA. Spontaneous regression of cancer: new insights. Biotherapy 1992; 4: 23-30.
82. Nagel S. Borish B, von Rohr A, Tobler A, Fey MF. Clonal analysis of a B-cell lymphoma with recurrent spontaneous remissions and evolution into chronic lymphocytic leukaemia. Ann Oncol 1996 Nov; 7(9): 953-60.
83. Bruner S, Norman D, Verdine G. Structural basis for recognition and repair of the endogenous mutagen 8-oxyguanine in DNA. Nature 2000 Feb 24; 403(6772): 859-66.
84. Baker HW. Biological control of cancer: the James Ewing Lecture. Arch Surg 1986; 121: 1237-41.
85. Rosenberg SA, et al. Experience with the use of high dose interleukin 2 in the treatment of 652 cancer patients. Ann Surg 1989; 210: 474-85.
86. Yettra M. Remission of chronic lymphocytic leukemia after smallpox vaccination. Arch Intern Med. 1978; 138: 1137-1138.
87. Chou J. Chi or the vital energy. Forshang World Magazine 1998 Dec 23; 15: 108-19.
88. DiStefano AD, Buzdar AU. Viral-induced remission in chronic lymphocytic leukemia? Arch Intern Med 1979 Aug; 139(8): 94-6.
89. Morant R, etal. Peripheral spontaneous remission of hairy cell leukemia following transfusion-associated hepatitis C. Schweiz Med Wochenschr 1991 Mar 9; 121(10): 344-6.
90. Fassas A, etal. Spontaneous remission of acute myeloid leukemia in a patient with concurrent Pneumocystic carinii pneumonia. Nouv Rev Fr Hematol 1991; 33(5): 363-4.
91. Coley WB. Some thoughts on the problem of cancer control. Amer J Surg. 1931 Dec; 14(3): 605-19.
92. Daws D. Holy Man. Father Damien of Molokai, Honolulu. University of Hawaii Press 1973.
93. Cromie WJ. Researchers switch cancer off and on-in mice. Harvard University Gazette 2000 Feb 10; 95(17): 5.
94. Parkin DM. The global burden of cancer. Semin. Cancer Biol. 1998 Aug; 8(4): 219-35.
95. Schottenfeld D, Fraumen JF Jr. Cancer, Epidemiology and Prevention. New York and Oxford. Oxford University Press. 1996: 171.
96. Abeloff MD, Armitage JO, Lechter AS, Niederhuber JE. Clinical Oncology. New York and Edingburgh. Churchill Livingston. 1995.
97. Gooch JL, Lee AV, Yee D. Interleukin 4 inhibits growth and induces apoptosis in human cancer cells. Cancer Res. 1998 Sep 15; 58(18): 4199-205.
98. Su ZZ, etal. The cancer growth suppressor gene mda-7 selectively induces apoptosis in human breast cancer cells and inhibits tumor growth in nude mice. Proc Natl Acad Sci USA 1998 Nov 24; 95(24): 14400-5.
99. Johnson MI, Hamdy FC. Apoptosis regulating genes in prostate cancer (review). Oncol Rep 1998 May-June; 5(3): 553-7.
100. Ohwada S, etal. Spontaneous regression of esophageal Ca with pulmonary metastases: case report. Jpn J Clin Oncol 1990 Jun; 20(2): 193-8.
101. Grunlee RT, Murray T, Bolden S, Wingo PA. Cancer Statistics, 2000. CA, a Cancer Journal for Clinicians. 2000 Jan/Feb; 50(1): 7-13.
102. Druker Brian J. Meeting Observer; Highlights of ASH 41st Annual Meeting at New Orleans Dec 3-7,1999. January 2000 Issue 4.
103. Boyd W. The Spontaneous Regression of Cancer. Springfield, IL. Charles C. Thomas. 1966:89.
104. Langreth, R. Targeting tumors. Forbes Magazine 2000 Jun 12; 242-244.
105. Wells,WA. Biotechnology, a new maturity. Forbes Magazine 2000 Jun 12; Special advertising section 1-24.
106. Albee, AL. Electrons, gene, society and nature. Yesterday, Today, and Tomorrow. Edited by Mumford, G.S. Cambridge, Mass. Privately published by the Harvard Class of 1950 and Travers Press. 2000: 14-15



For the first time ever, the American Medical Association Organized Medical Staff Section will open its door at the Interim Meeting to all physicians — regardless of practice affiliation or membership status — at a unique "Open House" gathering in Orlando, Florida, November 30 through December 4, 2000.

Your advocate for positive change.
The AMA wants to help you overcome the incredible challenges you face. Reduce onerous regulations and managed care demands. Protect your autonomy and patient relationships. Ensure appropriate reimbursement. Make sure no one treats physicians like commodities.

Your place to speak up.
To help unify the AMA and the nation's front-line physicians, this one-of-a-kind meeting offers you a direct avenue for raising your issues and concerns and proposing solutions.

Your opportunity to act.
The AMA will open the door. It's up to you to step through. And because your participation is so important, there's no fee. Just sign up and attend. For more information, call **800 262-3211,** or visit us online at **www.ama-assn.org/omss**

Register today!

AMA Organized Medical Staff Section (OMSS)
2000 "Open House" Meeting
November 30–December 4, 2000
The Hilton in the Walt Disney World Resort
Orlando, Florida

American Medical Association
Physicians dedicated to the health of America

The Relationship Between Type of Antidepressant and Neurovegetative Symptoms in Adult Unipolar Nonpsychotic Depression: An Opinion Survey

Jonathan K. Shepherd PhD, Elaine M. Heiby PhD, Julie A. Holmes BA,
Iqbal Ahmed MD, and Claire J. Jones

Abstract

The bi-directional nature of the neurovegetative symptoms of depression, as well as the differential response to antidepressant medications, underscore the existence of possible subtypes of this disorder. This study surveyed 56 physicians practicing psychiatry in Hawaii for opinions regarding the most effective antidepressant medication for the following symptoms: hypersomnia vs. insomnia, psychomotor agitation vs. retardation, and gain vs. loss of appetite or weight. Fluoxetine was found to be the drug of choice for weight and appetite gain, hypersomnia, and psychomotor retardation. Mirtazapine was viewed as most effective for weight and appetite loss. Trazodone was found most effective for insomnia and nefazodone for psychomotor agitation. It is concluded that subtyping of depression should be investigated at the symptom level and the generalizability of the effects of each specific compound should be tested.

The heterogeneous nature of depression has led to research designed to identify subtypes based on diagnostic criteria, physiological and biochemical markers, etiological evidence, and differences in response to treatment.[1,2,3,4] Identifying differential responses to antidepressant medications has become an important approach to subtyping given the rapid increase in prescribing these drugs in recent years.[5] While there have been surveys attempting to identify factors affecting physician choice of specific antidepressants, such as severity of depression and comorbidity with anxiety,[6] little is known about the relation of choice and presence of particular depressive symptoms.[3,4] The purpose of the present study is to explore subtypes in terms of prescribing habits for a subset of symptoms that differ markedly across cases of depression, the neurovegetative symptoms that can occur in a bi-directional manner (hypersomnia vs. insomnia, psychomotor agitation vs. retardation, and gain vs. loss of appetite or weight).

Correspondence to:
Elaine M. Heiby PhD,
Department of Psychology,
University of Hawaii, Honolulu, HI 96822
(808) 956-8414 fax (808) 956-4700
email: heiby@hawaii.edu

It is widely accepted that the major antidepressant groups differentially alter several serotonergic and noradrenergic neurotransmitter systems, directly and indirectly.[7] These antidepressants include monoamine oxidase inhibitors (MA0Is), tricyclic antidepressants (TCAs), and second generation compounds (SGCs; including selective serotonin reuptake inhibitors [SSRIs]). Given the potential differential effects of antidepressants, it follows that some medications would be relatively more effective with certain symptoms of depression,[3,4] particularly the bi-directional ones involving either an increase or decrease in neurovegetative behaviors.

In a recent review, Mongeau et at.[7] concluded agents that are 5-HT or noradrenaline reuptake inhibitors are equally effective for treatment of depression, but this conclusion was based on research that did not measure drug effects upon particular depression symptoms. Research on the effects of different antidepressants upon atypical depression, whose definition includes the reversal of the usual pattern of bi-directional symptoms mentioned above, has been mixed,[8,9] although one laboratory[10] has found the MAOI phenelzine to be superior to the TCA imipramine.

Only a few studies have explored the effects of the newer generation of antidepressants upon bi-directional symptoms.[11] Equivocal findings may be due to the following methodological limitations of these studies: (1) use of global improvement scores to evaluate treatment outcome, rather than measures of the effect of antidepressants upon each bi-directional symptom; (2) inclusion of only one drug within the type(s) under investigation, limiting generalizability to other compounds classified within the same type of antidepressant; (3) definitions of atypical depression that include not only neurovegetative behavior, but also premorbid personality characteristics such as rejection sensitivity[8]; and (4) use of heterogeneous and global criteria to label atypical depression that can include any two of four symptoms, which obscures information on the precise bi-directional symptoms involved. For example, using the Columbia criteria[10] a case of depression could be labeled atypical if weight gain and psychomotor retardation (severe fatigue, leaden paralysis) are present. It would be unknown in this case if sleep was increased, decreased, or unchanged.

Because little is known about specific antidepressant drug-symptom relations, the purpose of this study was to survey psychiatrists

about their prescription habits and clinical opinion of the most effective drug for bi-directional symptoms of unipolar nonpsychotic depression among adults. If physicians report symptom-specific efficacy of particular antidepressants, these observations would justify animal model testing and the conduct of clinical trials designed to create specific drug-symptom profiles along the lines proposed by Stahl.[4]

Method

Subjects. Participants were 56 psychiatrists practicing in Hawaii. Their medical specialties were as follows: 37 (62%) general psychiatry, 2 (3%) child psychiatry, 1 (2%) rehabilitative medicine, and 16 (27%) multiple psychiatric specialties. The mean age was 51.20 years (SD = 10.79) and 45 (80%) were male and 12 (20%) female. The mean years since licensure was 21.23 (SD = 11.14). Ethnicity was 2 (3%) Pacific Islander, 1 (2%) Hawaiian-part Hawaiian, 39 (65%) Caucasian, 11 (18%) Asian, 1 (2%) mixed, and 3 (5%) other. Their employment settings included 20 (33%) private practice, 5 (8%) hospital, 1 (2%) community health center, 3 (5%) university, 3 (5%) other, and 25 (42%) multiple settings. Some participants failed to report part of the demographic information, so percentages do not add up to 100%.

Materials. A fourteen-item Opinion Survey on Use of Antidepressant Medications was developed by the present investigators. The Survey provided the respondents with the list of three MAOIs, seven TCAs, and 12 SGCs (including SSRIs) that appear in Table 1. Three items asked respondents to rate on a 5-point Likert scale the frequency of prescribing each type of antidepressant for adults presenting with unipolar nonpsychotic depression defined as major depressive disorder, dysthymia, or depressive disorder not otherwise specified. One open-ended item asked what drug is most frequently prescribed by the respondent. Eight open-ended items asked the respondent to indicate the most effective medication for the following symptoms of adult unipolar nonpsychotic depression: weight loss, appetite loss, weight gain, appetite gain, insomnia, hypersomnia, psychomotor agitation, and psychomotor retardation. Two items measured diagnostic and treatment progress procedures typically used. These could include unstructured or semi-structured interview and mental status examination, structured interview, clinical rating or behavioral checklist, self-report questionnaires, and other unspecified devices. The remaining items concerned demographic information.

Table 1. Antidepressants included on the opinion survey

TRICYCLIC COMPOUNDS
Imipramine (TOFRANIL)
Desipramine (NORPRAMIN)
Trimipramine (SURMONTIL)
Protriptyline (VIVACTIL)
Nortriptyline (PAMELOR, AVENTIL)
Amitriptyline (ELAVIL)
Doxepin (ADAPIN, SINEQUAN)
SECOND-GENERATION COMPOUNDS
Amoxapine (ASENDIN)
Maprotiline (LUDIOMIL)
Trazodone (DESYREL)
Fluoxetine (PROZAC)
Fluoxetine (LUVOX)
Bupropion (WELLBUTRIN)
Sertraline (ZOLOFT)
Paroxetine (PAXIL)
Clomipramine (ANAFRANIL)
Venlafaxine (EFFEXOR)
Mirtazapine (REMERON)
Nefazodone (SERZONE)
MAO INHIBITORS
Phenelzine (NARDIL)
Isocarboxazid (MARPLAN)
Tranylcypromine (PARNATE)

Procedure. Surveys were mailed to 196 physicians with an addressed and stamped envelop. Physicians were those known by the Hawaii Medical Psychiatric Association to practice psychiatry in Hawaii. Fifty-six (29%) returned the Survey within approximately one month. Due to the anonymity of the survey, the differences between responders and nonresponders are unknown.

Results

Because the participants' reported opinions may have been affected by the assessment devices they typically use, it is important to consider these findings. In terms of establishing a diagnosis for unipolar nonpsychotic depression, 31 (52%) reported using unstructured or semi-structured interview and mental status examination, 1 (2%) self-report measures, and 23 (38%) multiple devices. In terms of treatment progress, 30 (50%) reported using unstructured or semi-structured interview and mental status examination, 1 (2%) self-report measures, 1 (2%) other devices, and 22 (37%) multiple devices.

Participants' mean ratings on a 5-point Likert scale (1 = not at all; 5 = always) of the frequency of prescribing the three types of antidepressants were 1.55 (SD = 0.60) for MAOIs, 3.79 (SD = 0.76) for SGCs, and 2.38 (SD = 0.68) for TCAs. Therefore, MAOIs were prescribed not at all to rarely, SGCs were prescribed sometimes to usually, and TCAs were prescribed rarely to sometimes. An ANOVA indicated that the means were significantly different ($p<.001$). Fisher's post-hoc least significant difference tests indicated that each mean was significantly different from the other two means when considering the familywise error rate.

When asked what drug on Table 1 they most often prescribed, 51 (83%) respondents reported SGCs and 1 (2%) reported TCAs (imipramine). The remaining respondents indicated multiple types of drugs. Of the respondents reporting specific SGCs as most commonly prescribed, 34 (52%) indicated SSRI's (sertraline, fluoxetine, and paroxetine). The number and percent of respondents reporting they most often prescribe other SGCs are as follows: 2 (3%) nefazodone, 1 (2%) trazodone, and 1 (2%) venlafaxine.

In order to test whether there is an association between antidepressant drugs and each bi-directional symptom, Chi-square analyses of expected versus obtained frequencies were conducted both for type of drug and for specific drugs. The results for each symptom are listed below and reported in Table 2. Percentages do not total to 100 due to listwise deletion of missing data.

Table 2. Significant drug-symptom associations

Symptom	Drug Type	Specific Drugs
Weight loss	SGC	Mirtazapine (REMERON)
Weight gain	SGC	Fluoxetine (PROZAC)
Appetite loss	SGC	Mirtazapine
Appetite gain	SGC	Fluoxetine
Insomnia	SGC	Trazodone (DESYREL)
Hypersomnia	SGC	Fluoxetine
Psychomotor retardation	SGC	Fluoxetine
Psychomotor agitation	SGC	Nefazodone (SERZONE)

Note: SGC = second generation compound; trade names for drugs are in parentheses

Weight loss. For type of drug, 18 (30%) reported TCAs while 29 (48%) reported SGCs to be most effective (Chi-square = 73.62, df = 2, p < 001). Of the specific drugs indicated as most effective, most (18%) reported mirtazapine (Chi-square = 16.13, df = 4, p < .003).

Weight gain. For type of drug, 2 (3%) reported TCAs while 46 (77%) reported SGCs to be most effective (Chi-square = 63.72, df = 2, p <.001). Of the specific drugs, most (43%) reported fluoxetine as most effective (Chi-square 61.31, df = 5, p <.001).

Appetite loss. For type of drug, 17 (28%) reported TCAs while 30 (50%) reported SGCs to be most effective (Chi-square = 69.99, df = 2, p <.001). Of the specific drugs, most (17%) reported mirtazapine as most effective (Chi-square 21.67, df = 5, p <.001).

Appetite gain. For type of drug, 1 (2%) reported TCAs while 46 (77%) reported SGCs as most effective (Chi-square = 65.25, df = 2, p <.001). Of the specific drugs, most (48%) reported fluoxetine as most effective (Chi-square = 76.97, df = 4, p <.001).

Insomnia. For type of drug, 7 (12%) reported TCAs while 44 (73%) reported SGCs as most effective (Chi-square = 58.46, df = 2, p <.001). Of the specific drugs, most (33%) reported trazodone as most effective (Chi-square = 38.52, df = 5, p < .001).

Hypersomnia. For type of drug, 1 (2%) reported TCAs, 44 (73%) reported SGCs, and 4 (7%) reported MAOIs as most effective (Chi-square = 277.10, df = 3, p <.001). Of the specific drugs, most (40%) reported fluoxetine as most effective (Chi-square = 56.13, df = 5, p <.001).

Psychomotor retardation. For type of drug, 5 (8%) reported TCAs while 44 (73%) reported SGCs as most effective (Chi-square = 58.47, df = 2, p < .001). Of the specific drugs, most (38%) reported fluoxetine as most effective (Chi-square = 41.78, df = 4, p <.001).

Psychomotor agitation. For type of drug, 13 (22%) reported TCAs while 36 (60%) reported SGCs as most effective (Chi-square = 57.61, df = 2, p < .001). Of the specific drugs, most reported nefazodone (22%) as most effective (Chi-square = 26.39, df = 5, p <.001).

Discussion

The results of this survey must be viewed within the limitations of the naturalistic survey method employed. The participants were a convenience sample of physician volunteers whose names were on the mailing list of the Hawaii Psychiatric Medical Association and were not randomly selected. The differences between responders and nonresponders to the survey are unknown due to the desire to maintain anonymity. The survey was developed for this investigation and is of unknown reliability and validity. We report aggregate opinion data only, rather than objective case-by-case treatment and symptom profiles and outcome measures, so our findings are subject to reporting biases. In addition, many of the survey questions obtained frequency data on drug-symptom relations rather than Likert-like independent ratings in order to keep the survey brief (ratings would have required an additional 176 questions). Finally, we did not assess a range of patient and physician factors that could affect prescribing habits, such as other depression symptoms, side effects, insurance, marketing factors, past response to other drugs, Axis II co-morbidity[12] medical condition, type of psychiatric practice (e.g. private or institutional), type of training (e.g., biological-psychotherapy focus), and years of experience.

We found that the most common type of antidepressant medication prescribed for unipolar nonpsychotic depression and for each specific bi-directional neurovegetative symptom was a SGC (especially SSRIs). This finding is consistent with prior investigations of prescribing habits reporting that SSRIs were chosen most frequently by psychiatrists for outpatient depression regardless of patients' age, sex, race, or payment source.[5]

Our most interesting findings concerned what particular SGC was associated with specific bi-directional symptoms. Of the 12 SGCs to consider, the participants reported specific neurovegetative symptom effects for the following four compounds: mirtazapine, fluoxetine, trazodone, and nefazodone (see Table 2 for drug-symptom associations).

It is noteworthy that fluoxetine was reported as being most effective for hypersomnia, weight and appetite gain, and psychomotor retardation as these symptoms constitute a partial description of atypical depression according to the Columbia criteria.[8] Our findings are consistent with Nierenberg et. al's call for the investigation of the effects of SGCs upon atypical depression.[11] However, the Columbia criterion requires only two of these symptoms to be present, indicating the importance of investigating the effects of antidepressants at the symptom level.

The prescribing habits of the psychiatrists participating in this study indicate that clinicians tend to tailor their choices of antidepressants at least partly based upon neurovegetative symptom profiles. The reported antidepressant of choice varied as a function of the direction of change in psychomotor activity, sleep, and appetite or weight. Therefore, our findings support a subtyping or symptom-treatment profiling approach to unipolar nonpsychotic depression.[1,2,3,4]

The basis of symptom profiling by our participants of course is unknown. One possible explanation is that the clinicians are selecting compounds based upon what is known about the agent's differential effects upon certain serotonergic and noradrenergic neurotransmitter systems. For example, none of the agents in Table 2 are considered to inhibit dopamine reuptake but they do differ in terms

of sedative activity, anticholinergic activity, inhibition of norepinephrine and serotonin reuptake, and blockade of serotonergic and noradrenergic receptors.[12] Another possibility for our findings is that clinicians have also had the opportunity to observe patterns of the therapeutic and side effects of different agents upon presenting neurovegetative symptoms and prescribe accordingly. This symptom profiling would be consistent with reports of similar therapeutic and side effects in the literature. [4]

The reported differential effects of antidepressant agents as a function of presenting symptoms is inconsistent with arguments that all drugs that inhibit 5-HT reuptake are equally effective.[7] The results of this study suggest that there is a need for clinical guidelines for the choice of specific antidepressant medications based upon the particular presenting symptoms of unipolar nonpsychotic depression.[3,4] The findings support the investigation of animal models of neurovegetative symptoms of depression as well as the implementation of clinical trials that evaluate the generalizability of the effects of each drug compound across type of agent and across type of depressive symptom.

Acknowledgements

This paper was completed by the co-authors following the death of Dr. Jon Shepherd on November 23, 1998. Dr. Shepherd developed the hypotheses and general methodology for the study. We would like to dedicate this article to Dr. Shepherd who was an assistant professor in the Department of Psychology at the University of Hawaii.

We would like to thank the Hawaii Medical Psychiatric Association for providing a list of physicians practicing psychiatry in Hawaii and the participants of this study. We would also like to thank Dr. Daniel Blaine for consultation on the statistical analyses and Barbara Haia for help with inputting the data.

References

1. Heiby EM, Staats AW. Depression and its classification. In Eifert G, Evans I eds. Unifying behavior therapy: Contributions of paradigmatic behaviorism. New York: Springer. (pp. 220 - 246), 1990
2. Winokur G. All roads lead to depression clinically homogenous, etiologically heterogeneous. J Affect Disord 1997;45: 97 - 108
3. Rosenbaum JF. Depression and its subtypes: A treatment update. J Clin Psychiatry 1998; 59: 3 - 4
4. Stahl SM. Selecting an antidepressant by using mechanism of action to enhance efficacy and avoid side effects. J Clin Psychiatry 1998;59: 23 - 29
5. Offson M, Marcus SC, Pincus HA, Zito JM, Thompson JW, Zarin DA. Antidepressant prescribing practices of outpatient psychiatrists. Arch Gen Psychiatry 1998;55: 310 - 316
6. Isacsson G, Redfors 1, Wasserman D, Bergman U. Choice of antidepressants questionnaire survey of psychiatrists and general practitioners in two areas of Sweden. BMJ 1994;309: 1546 - 1549
7. Mongeau R Blier P de Montigny C. The serotonergic and noradrenergic systems of the hippocampus: Their interactions and the effects of antidepressant treatments. Brain Res Rev 1997;23: 145 - 195
8. Lam RW Stewart JN. The validity of atypical depression in DSM-IV. Comp Psychiatry 1996;37: 375 - 383
9. Pande AC Birkefte M Fechner-Bates S Haskett RF Greden JF. Fluoxetine versus Phenelzine in atypical depression. Biol Psychiatry 1996;40: 1017 - 1020.
10. Quitkin FM Steward JW McGrath PJ Tricamo E Rabkin JG Ocepek-Welikson K Nunes E Harrison W Klein DF. Columbia atypical depression: A subgroup of depressives with better response to MAOI than to tricyclic antidepressants or placebo. Br J Psychiatry 1993; 163(supl.21): 30 - 34
11. Nierenberg AA Alpert JE Pava J Rosenbaum JF Fava M. Course and treatment of atypical depression. J Clin Psychiatry 1998;59: 5 - 9
12. Julien RM. A primer of drug action. New York: W.H. Freeman 1998



HAWAII POISON CENTER

OAHU: 941-4411
NEIGHBOR ISLANDS TOLL-FREE:
1-800-362-3585
Free Hotline 24 Hours a Day.

POISON CENTER TIPS

- Keep the number of the Hawaii Poison Center on or near your telephone.
- If you suspect a poisoning, do not wait for signs and symptoms to develop. Call the Hawaii Poison Center immediately.
- Always keep Ipecac Syrup in your home. (This is used to make a person vomit in certain types of poisoning.) **Do not use Ipecac Syrup unless advised by the Hawaii Poison Center.**
- Store all medicines, chemicals, and household products out of reach and out of sight, preferably locked up.
- A good rule to teach children is to "always ask first" before eating or drinking anything—don't touch, don't smell, don't taste.

Donate to help us save lives.
Mail checks, payable to:
Hawaii Poison Center
1319 Punahou Street, Honolulu, HI 96826


THE
1.2
BILLION
DOLLAR
MAN
A year ago, a STROKE left John Monteiro with barely enough strength to lift one arm. Let alone Danielle, his three-year-old daughter. THANKS in part to RESEARCH made possible by over $1.2 billion in support from the American Heart Association, today John holds Danielle with no effort at all. And he lifts the spirits of others as a VOLUNTEER with the American Heart Association's Stroke Outreach Program. John is proof that research SAVES LIVES. And to us, nothing could be worth more. For more information call 1-800-AHA-USA1.
American Heart Association℠
Fighting Heart Disease and Stroke
This space is provided as a public service. ©1994, American Heart Association.

News and Notes Henry N. Yokoyama MD

Notes and News Hawaii November – December 1969

Transplant symposium (Oct. 12-13)

One of the best bargains in recent years has been the symposium on Human Organ Transplantation sponsored by the Honolulu Medical Group Research Foundation. Form a nominal $15.00 registration fee we attended two morning sessions and an evening banquet for two at the Ilikai replete with cocktails.

As we turned into the HIC parking lot on Sunday morning, a stony-faced, not-to-bright lot attendant growled, "Park to your right ... show's over there." With the World Series being telecast live, the attendant probably thought it must be some show for so many to come out, on a Sunday morning at that. A dapper Vic-Hay-Roe gave with the welcome spiel and introduced Dean Cutting who promptly relinquished the podium with the remark, "Nobody stayed away from TV this morning just to hear me talk." Program chairman Dick Blaisdell gave with a cheery "mahalo" and described Irvine Page as "the distinguished clinical scientist scholar, editor, and himself a phenomenon of our times ..." Irvine Page prefaced this talk, An Introduction to Organ Transplantation, with the confession. "I am by nature a nasty person and it took me 65 years to find me.... What doctors say at cocktail parties and in public are two different things, so a little bit of controversy is a good thing." We soon discovered that one mark of a great speaker is that he can ramble and yet sound coherent and interesting. The following are excerpts from Dr. Page's ramblings: "We ask, why indict an amorphous group like the transplanters (referring to the heart transplanters)....Some are great and some are just plain lousy....What we need to ask is "What are the priorities we want in life? My quarrel with the transplant boys is that they have tried to ignore scientific procedures....Medical people have no way of expressing themselves....The AMA has no way of expressing itself because it is such a large organization: it has to be a consensus....Consensus is a good thing, but not always....The government, recognizing that consensus of the majority is a weakness, has moved in....We should have a National Academy of Medicine which can take its place with the National Academy of Science....You know scientists are just plan awful....they have to be awful to be good scientists....but they have managed to weld themselves together....Make no mistake about it. Government policy will determine what course medicine will take....There is creeping Federalism. The Supreme Court says, "There is no such thing as a government grant without government control." In the transplant field we are already seeing this....

Dick Blaisdell introduced Robert Good from the University of Minnesota, who talked on Rejection Phenomena: Basic Immunologic Concepts. Dick described the rejection phenomenon as "some tissues have the 'Aloha Spirit' and accept while others do not and reject." Bob Good, a hulking, droop-eyed, computer-brained lecturer with a booming voice, spouted a staccato of facts and information, too rapid for us lesser-endowed to digest. He seemed to cram what must have been a semester's course into a half-hour lecture (he later apologized that he was a bit rushed). We did understand his introductory joke, though, so all was not lost. Bob said: "speaking after Irving Page with his relaxed manner reminds me of the Indian out on a desert 25 years ago who was sending out smoke signals when he saw the awesome atomic blast and said, "Chee! I whish I had said that...."We also gathered a few pearls here and there such as "Cellularimmunological deficiency shows a ten to twenty per cent increased incidence of cancer while humoral immunological deficiency results in leukemia. Every known carcinogen is immunosuppressive, and all tumors have immunosuppressive agents. The immunological mechanism has anticancer properties.

After the barrage, we staggered to the coffee and doughnut counter to restore our benumbed neurons. Thomas Starzl from University of Colorado was a slower-paced lecturer, more our speed. He complained, "Mother said never follow a banjo act, but she never said what to do when there were two banjo acts." Tom reviewed his experiences with his three kidney transplant series. Following his second series (1964 to 1966) of 42 cases, in which histocompatibility was the theme, he concluded that matching was not the answer. His present triple drug regimen (Prednisone, Imuran, and Al.G or ALS) was started in June, 1966, and in this series, he has a 95 per cent or better survival rate with related donors and 90 per cent or better rate even with non-related cadaver kidneys. The problem with liver and heart transplants, he pointed out, is that there is no mechanical support system available like the kidney like the kidney machine.

Following Tom Starzl's intelligible lecture, "surgery of Organ Transplantion," moderator Dick Blaisdell (who would make an ideal official welcomer for the Hawaii Visitors Bureau) effused: "Mahalo to the out-going speaker, and Aloha to the new speaker." We were proud of Arnold Siernsen, director of the Hemodialysis Center, who—if he was a little awed by the presence of world authorities on organ transplantation—did not show any indication of it, and gave an excellent resume of the current status of hemodialysis and renal transplantation in Hawaii which compares favorable with other large medical centers on the mainland. During the panel discussion that followed, Robert Good explained that " every kind of genetically determined immunological deficiency is related to malignancy. The ultimate use of immunology is to eliminate the first tumor cells, but immunological means is not for large tumors." He launched upon a protrated dissertation on IgA and IgM and the reasons why immunological means cannot be used for tumor therapy. When he finished, dick Blaisdell said grimly, "Mahalo after that explanation." Dick Ando, who sat next to us, commented solo voice, "It must be pretty good...I don't understand it."

On Monday morning, we were welcomed by smiling Joe Oren. Dick Mamiya moderated and we were trented to Robert Good's "Tissue Typing" (an intellectual barrage which was impressive and nonetheless imcomprehensible). Noboru Oishi then reported on tissue antigens among ethnic groups in Hawaii (a joint project with Mitsuo Yokoyama et al of the Kuakini Medical Institute). Noboru's report showed that Chinese apparently have less tissue antigens than other local racial groups.

Before starting his final lecture, "the Future of Organ Transplantation," tom Starzl glanced towards Mitsuo Yokoyama in the audience and in a reverent tone described him as the world authority on IgG. (We are happy to report that under our close scrutiny, Mitsuo's head only swelled a few centimeters, but there was that ridiculously happy grin passed on his face all day and for many days to come.) "Now, may we have the first slide please." George Nagao, who was the projectionist for the day, reported plaintively, "Dr. Starzl, you have the controls." "Then we are all in trouble," he retorted, as he searched for the controls on the podium. "The projectionist is the usual scapegoat in early-morning slide lectures," he explained sympathetically. Poor George certainly had trouble enough for the fuse blew during the slide session.

Tom Starzl explained some of the technical difficulties encountered in liver and lung transplant and discussed graft rejections. We learned that technical errors from vascular anomalies account for many of the deaths in liver transplants, and that livers can be preserved for only one day. The same triple regimen of Imuran, prednisone, and ALG is used in liver transplants. Tom pointed out that here in Hawaii, all Caucasians would be potential recipients and all Hawaiians and Japanese will be potential donrs, since these groups have little antigen.

Following the coffee break intermission, physician-lawyer and editor of *Professional Liability Newsletter*, David Rubsamen of Berkeley, described "the many legal trolls waiting under the medical bridges to trap the unwary in the future when organ transplants are commonplace." The first troll, he says is the definition of death. Under existing law, there is no codification of brain death (i.e., when the brain shows a flat EEG for 48 hours). Other trolls under future medial bridges include the matter of "informed consent" and the allocation of organ resources. A final troll is the problem of social issues such as overpopulation, pollution, etc., which could result from keeping men alive until they are 100 to 125 years old. David warned, "Perhaps we are reaching a time when we will be able to say that technological progress per se is not automatically good. Maybe

it's going to prove out that we have to make some really difficult decisions in the area of the biological revolution which is now taking place and that there will have to be some law limiting this progress.

We attended the transplantation banquet at the Ilikai and managed to get within a stone's throw from Irvine Page, but even with several fortifying drinks under our belts, we lacked the temerity to go up and talk to one of the great outspoken medical thinkers of our times. In characteristically relaxed and rambling fashion. Dr. page discussed the ethical aspects of transplant and we managed some desultory notes: "Ethics is a nice thing to talk about....The Federal government even spent $150,000 for a symposium on medical ethics....the concept of just what is ethics is widely misunderstood....People too often think of medical ethics as a rule book of absolutes dealing with what is legal and what is illegal. It is not that at all....Ethics is manual of good behavior, like an Emily Post of medical behavior that enables a physician to get along with other physicians and his patients....Medical behavior has to watch itself—not to give in to contemporary behavior, or we'll end up like rabbits (sic)....The transplantation of kidneys was handled according to regular scientific procedure; i.e., get evidence, marshal it, and then publish....This evidence was not presented in the case of Capetown....Anyone who abrogates this is doing injustice....This is true for cardiac transplantors and any others who do not follow this procedure. For example, with Andrew Ivy and Krebiozen, it took 13 years of legal entanglements to demonstrate that there was nothing....Yet presented 13 years later to a lay jury, they still found some evidence that it worked...Unfortunately, everyone is making medical decisions....There is also a question of priorities. Should children be kept from kwashiorkor? Should dwe spend $150,000 to keep a 55-year when you consider life as eternal....As Alvarez says about small strokes. 'Death takes little nibbles out of you'....There is no such thing as an absolute value in abrogate our values to the Federal government, the AMA or anyone else....There is no crisis in medicine and we have a body of knowledge to keep clear...."(We were relieved to learn that the "medical ethics" we keep harping about is an unwritten code of behavior, and a rather nebulous one at that.)

Editors Note:
Henry Yokoyama has been writing "News and Notes" in the journal since 1964. At that time it was called "Notes and News." I commented about his coverage of the organ transplantation symposium held in 1969 in last month's editorial. Without his approval we reprint his report at this time.

Henry many thanks for your reports, your insights and your humor -- keep them coming for many more years.

PHYSICIANS
Air Force Healthcare. Good Pay. Professional Respect.

Why Do You Think We Say "Aim High"?

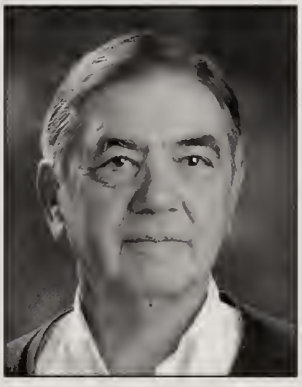
Experience the best of everything. Best facilities. Best benefits. Outstanding opportunities for travel, 30 days vacation with pay, training and advancement.

For an information packet call
1-800-423-USAF
or visit www.airforce.com.

You'll see why we say, "Aim High."

AIM HIGH
AIR FORCE
HEALTH PROFESSIONS

"We believe decisions should be made by physicians and their patients, not by an insurance company."



– *Max Batticelli, M.D.*
Choirmon & CEO, UHA
Professor Emeritus,
John A. Burns School of Medicine

UHA was started by practicing physicians who were teachers at the John A. Burns School of Medicine.

With physician leadership, quality of care is our first priority.

Shouldn't your health insurance be from a company founded by physicians and committed to quality health care?

For competitive rates and the best service in Hawaii, call UHA today.

University Health Alliance

700 Bishop Street, Suite 300 / Honolulu, Hawaii 96813-4100
1-800-458-4600, ext. 4009 / www.uhahealth.com

University Health Alliance is a mutual benefit society offering medical, drug, vision and dental plans to employers throughout Hawaii.


PHOTO PARADE / EDDIE ADAMS

HELP PUT A SMILE ON MY FACE

LET'S FIND CURES FOR NEUROMUSCULAR DISEASES.

MDA®

MUSCULAR DYSTROPHY ASSOCIATION

(800) 572-1717



Over 4,000 services. Right at your, well, you know.
Ask Aloha United Way is a great community service where you can get answers to your everyday questions. Just visit askalohaunitedway.org or call 275-2000 (1-877-275-6569 toll-free from the neighbor islands).

Aloha United Way
Together, making lives better

Arleen D. Jouxson, Esq.
Attorney at Law


A.K.A. Arlene Meyers, MD, MPH

- **Wahiawa pediatrician since 1979**
- **Associate Clinical Professor, JABSOM**
- **1998 Roscoe Pound award winner in health care law**
- **President & founder of the Hawaii Coalition For Health**

NEED HELP?

- **with Par. Agreements?**
- **Understanding health care laws?**
- **Resolving disputes with health insurers?**

CALL 621-8806 (Oahu) for more information or for a free initial consultation at your place of business.

302 California Ave., #209, Wahiawa, HI 96786, Ph: 621-8806; Fax: 622-5599

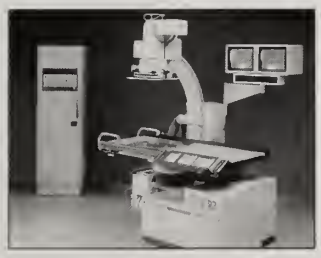
AT OUR CENTER, KIDNEY STONES RECEIVE SPECIAL TREATMENT.



At the Kidney Stone Center of the Pacific, we specialize in the treatment of patients with kidney stones.

Our new Extracorporeal Lithotripsy therapy takes approximately 30 minutes. It's a painless, non-invasive procedure that uses targeted sound waves to break stones into particles small enough to pass. At the Kidney Stone Center we work with physicians to determine the best treatment options.

The Kidney Stone Center of the Pacific is conveniently located at The Queen's Medical Center. Their facilities provide complete support for additional treatment options, or if complications should occur.



For comprehensive treatment of kidney stones, you do have a choice of treatments at the Kidney Stone Center of the Pacific. For more information please contact us at 547-4100.

Kidney Stone Center of the Pacific

Symptoms of Kidney Stones
- *Mild or severe back pain*
- *Nausea and vomiting*
- *Blood in the urine*

A partnership of Kuakini Development Corp., Queen's Health Technologies, Inc. and Straub Imaging Services, Inc.

www.kidneystonepacific.com

Classified Notices

To place a classified notice:

HMA members.—Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.

Nonmembers.—Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Office Space

ALA MOANA BLDG.— PHYSICIANS WANTED to share space and support services. Interest in physical rehab. preferred. We have flexible rental arrangements starting at one half-day per week . Run your practice with no fixed overhead. Contact Dr. Speers, REHABILITATION ASSOCIATES, 955-7244.

WANTED.—OUTER ISLAND OFFICE SPACE one day per month on Kauai, Big Island, and Maui. I require only one exam room and am very flexible with scheduling. No supplies or support staff needed. Please Call 808-372-7246 for details.

Wanted

PSYCHIATRIST.— Kaneohe residential Program for adolescents seeks consultant two half-days per month. Schedule, duties, compensation negotiable. Contact Administrator: RAINBOW HOUSE 239-2399.

KAUAI.— Seeking a full-time BC/BE general urologist for the beautiful island of Kauai. Candidates should be experienced in a broad spectrum of adult urology problems and comfortable with common pediatric problems. Kauai Medical Clinic is a sixty-physician multispecialty clinic affiliated with Wilcox Health System's 181-bed community hospital. Excellent quality of life in a safe, beautiful, family oriented, rural community. Competitive salary, benefits, and relocation package. **Send/fax CV to M. Keyes-Sakai, Kauai Medical Clinic, 3-3420 Kuhio Hwy., Ste. B, Lihue, HI 96766-1098; fax (808) 246-1625;**
E-mail: mkeyes-saiki@wilcoxhealth.org.

Until there's a cure, there's the American Diabetes Association.

Until there's a cure, there's the American Diabetes Association.

The Weathervane Russell T. Stodd MD

Our Deeds Determine Us, As Much As We Determine Our Deeds.
The passing of William Dang, Sr. M.D. marks a great loss to the medical profession and to the Hawaii Medical Association. A true gentleman, a wise and kind father with an extraordinary medical progeny, and a proud past president of Hawaii Medical Association, Bill was instrumental in bringing affordable medical liability insurance to Hawaii's physicians during the insurance crisis of the 1970s. As costs skyrocketed and virtually all underwriters vacated Hawaii, Dr. Dang and HMA Executive Vice-president Jonathon Won, convinced a then new physicians mutual, Medical Insurance Exchange of California (MIEC), to come to our rescue. Since then, MIEC has grown into a very strong organization, protects about 1150 practicing physicians in Hawaii, supports the HMA in multiple areas, and has provided excellent malpractice protection with very competitive premium rates. For this alone, and many other reasons, we all owe Bill Dang. We benefit from his legacy and treasure his memory.

Too Many Clowns And Not Enough Circuses.
The United States Army recorded the incidence of hospitalized ocular injuries over a 10 year period ending in 1995. Because the personnel who sustain eye injuries frequently become unfit for military service, the economic cost can be enormous. The highest rate of injury was in 17 to 19 year olds, and males were twice as likely as females to be injured. The annual rate was 77 per 100,000, and the rate decreased by 38% over the 10 year period. Interestingly, the great majority of injuries were not related to weaponry nor war. 21% were caused by machinery or tools, 18% due to fights, 18% transport injuries, 11% sports or training, and a mere 7% due to weaponry or acts of war (90% of those were non-battle activities). The outcome of the collection of data suggests that appropriate preventive measures would be useful in decreasing the incidence of ocular trauma. Should the army go sailing on the OSHA?

Computers May Reduce Man's Limbs To Push-Button digits.
Robotic surgery is here. The Food and Drug Administration has approved the da Vinci system for minimally invasive surgery, and it is now being marketed by *Intuitive Surgery, Inc.*, of Mountain View, California. Through a one centimeter incision, the surgeon controls the robotic arms which are viewed on a 3-D video screen and controlled with joysticks and foot pedals equiped with sensors to manipulate the instruments. The FDA said the safety and effectiveness of the new device is about the same as laparoscopy. Going a step beyond, the device mimics the dexterity of human hands, and the fine movements such as suturing and dissection are easier than with laparoscopy. Currently under testing in several hospitals for cardiac surgery, the device is expected to be useful in a broad array of surgeries. Who knows? If silicon valley has its way, many surgical procedures may be programed onto floppy discs, and the entire operation can be performed by computer.

You Never Really Learn To Swear Until You Learn To Drive.
To avoid sitting in traffic jams, more commuters are opting for bicycles. Bike riders like the exercise and environmental friendliness offered by two-wheelers, not to mention the ability to whip past stalled traffic. As a result, the number of people biking to work has grown more than 20% in the last five years, to 7 million, and some businesses are offering lockers, showers and other bike-friendly facilities. The down side is that many motorists are loath to get stuck behind slower-moving bicyclers, and clashes between the two are rising in number and violence. For people ages 25 to 64, cycle-related fatalities have risen almost 30% in the last five years. Drivers throw beer or soda cans, cut bikers off and have even hit bikers. The cyclists are not innocent. They often ride on sidewalks, go the wrong way on one way streets, ignore stop signs, or traffic control signals, and sometimes throw objects at motorists. Caught in the middle are the police who must referee the sniping and bickering. At the root of the problem is the increased number of motor vehicles and the frequent traffic jams so many hours of the day in busy cities like Honolulu. Be careful out there.

Breast Fed is Best Fed, Right? Yes, But Not If The Mother Is HIV Positive.
The World Health Organization estimates that over one million children under age 15 in sub-Saharan Africa are living with HIV/AIDS, and the vast majority probably contracted the virus while breast feeding from their mothers. In the 1970s public health advocates fought a ferocious battle with infant-formula makers. They charged that marketing methods induced poor women to rely heavily on formulas and many women used contaminated water or diluted the formulas, causing a serious threat to the health of babies. They vigorously pushed breast feeding. Now, in the heat of the AIDS pandemic, experts are saying that evidence strongly suggests that infant formula should be aggressively promoted. Drugs can block the transmission of the virus, but obtaining the medicine and getting it to the infected mother in proper time is another obstacle.

Injustice Is Relatively Easy To Bear; What Stings Is Justice.
The question of why a doctor gets sued is one every physician should keep in mind. The number one protection against a malpractice suit is the doctor-patient relationship. It is an established truth that many times when the doctor has committed a negligent act, the patient will refuse to file a complaint because of a genuine affection and respect for the doctor. Moreover, patients understand that bad results can occur, and are willing to accept that, if the doctor takes the time to present the problem and explain the bad result. The second point is doctor arrogance. Malpractice attorneys are delighted when they encounter an arrogant physician (usually a surgeon, and usually male) at deposition, because they know the jury won't like the doctor. Even if there is no negligence, defense attorneys are inclined to settle a case when they find it difficult to "humanize" the doctor. Another major concern in malpractice cases occurs when the doctor is caught in a lie, even if there is no negligence. This is called an incendiary device, and trial lawyers love them. Juries are not stupid, and do not like liars. And always remember to write your medical records as if a malpractice attorney were going to read them, because perhaps one will.

We Live And Learn, But Grow No Wiser.
The National Highway Traffic Safety Administration has advanced new air bag rules. The new regulations encompass testing and deployment of the advanced air bags, which employ better sensors and controls than older, sometimes dangerous bags. The new rules require manufacturers to test air bags on unrestrained dummies of small women and children ages 1,3,and 6. The original crash tests were conducted on average-sized male dummies, which caused some serious injuries and sometimes even death to small human beings. The advanced air bags will be gradually implemented beginning in September 2003 and continuing through August 2006. Manufacturers must reduce risk by installing automatic switches or sensors that detect the size of occupants and deactivate bags or adjust the force of inflation accordingly.

Man (And Woman) Is So Constituted That No Matter What Color You Are Everyone Requires About The Same Amount Of Food.
Who said life was fair? A comfortable suburban 2200 sq. ft. house with four bedrooms and 2 1/2 baths in Jackson, Mississippi, is valued at $126,500. The same house in San Jose, California, is valued at $708,600, while in Honolulu it would be valued at $372,700 (if you can find one). A gallon of milk on Maui costs $4.39, while in San Antonio the cost is $2.28. Figure in other items such as foodstuffs, taxes, transportation, utilities, and cost of doing business, and one can see why living in our island paradise means accepting a reduction in discretionary income.

ADDENDA
- ❖ 95% of food poisoning cases are never reported.
- ❖ Nearly 50% of bank robberies take place on Friday. Week-end party?
- ❖ Does the little mermaid wear an algebra?

Aloha and keep the faith —rts■

Contents of this column do not necessarily reflect the opinion or position of the Hawaii Ophthalmological Society. Editorial comment is strictly that of the writer.

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA

One of a kind.



Unmistakable.

At MIEC, we know what it means to stand out in the crowd. Twenty-five years ago, we started the West's first doctor-owned, not-for-profit malpractice insurance company. The idea quickly caught on, and now there are dozens of "doctor-owned" companies throughout the country.

But there is only one MIEC. Our rate and dividend history is unparalleled. Guess that's why we don't need a large sales or marketing staff. Our track record speaks for itself.

The original is still the best. Call us.

Medical Insurance Exchange of California
6250 Claremont Avenue, Oakland, California 94618
Telephone 800-227-4527 www.miec.com
HAWAII CLAIMS OFFICE: 1360 South Beretania Street, Honolulu, Hawaii 96814

Our 25th Anniversary, 1975–2000

Sponsored by Hawaii Medical Association

Hawaii medical journal
v. 59
no. 10
October 2000
Received on: 11-29-00
Brown University Library
SCI

HAWAII MEDICAL JOURNAL

November 2000 Volume 59, No. 11 ISSN: 0017-8594



MIXED ADC 967
Serials Dept
Sciences Library
Box I
Brown University
Providence, RI 02912-0001

HAWAII MEDICAL ASSOCIATION 1856

You call that Leadership?

What would it cost to have Hawaii's leading business executives, community leaders, labor representatives, health care professionals and clergy run your business?

Ask HMSA.

For more than 60 years, Hawaii's leading health plan has been led by a volunteer board of directors made up of some of the most distinguished people in our community. That's right—volunteer. Our directors are committed to improving the health and well-being of Hawaii's people and they accept no compensation for their hard work.

HMSA. Now that's a health plan.

HMSA

Blue Cross
Blue Shield
of Hawaii

An Independent Licensee of the Blue Cross and Blue Shield Association

Choices for a Healthier Hawaii

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
Vincent S. Aoki MD, Benjamin W. Berg MD,
John Breinich MLS, Satoru Izutsu PhD,
James Lumeng MD, Douglas G. Massey MD,
Myron E. Shirasu MD, Frank L. Tabrah MD,
Alfred D. Morris MD

Journal Staff
Managing Editor: Becky Kendro
Editorial Assistant: Drake Chinen

Officers
President: James Lumeng MD
President-Elect: Philip Hellreich MD
Secretary: Gerald McKenna MD
Treasurer: Paul DeMare MD
Past President: Patricia L. Chinn MD

County Presidents
Hawaii: David Camacho MD
Honolulu: Walter K.W. Young MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Patrick Aiu MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 1999 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 404

Medical School Hotline
Kelly Withy MD 404

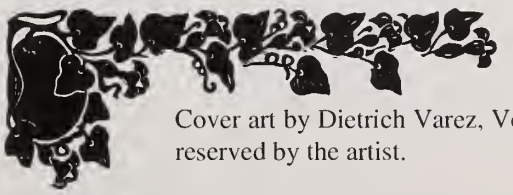
Attitudes on Organ Donation among Hawaii Physicians
Linda L. Wong MD, Whitney M. Limm MD, Alan H.S. Cheung MD, Chris Carroll RN, and Livingston Wong MD 407

An Update of Hawaii QUEST's Health Plans Performance, Using HEDIS Measures, 1997-1998
Matthew Loke PhD and Lynette Honbo MD 411

The Correlation between Cancer Incidence and Kava Consumption
Gregory G. Steiner DDS, MS 420

Classified Notices 425

Weathervane
Russell T. Stodd MD 426



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

Iolani Palace

The Royal palace of King Kalakaua was started in 1879 and completed in 1882. Cost: $350,000

Editorial

Norman Goldstein MD
Editor, Hawaii Medical Journal

The Journal is Alive and Well

As members of the Hawaii Medical Association are aware, changes are occurring. With the hiring of a new Executive Director, Stephanie Aveiro, who has been working with the Council, various committees and the entire membership to implement cost-cutting measures, the Medical Journal has come under scrutiny.

The journal was first published in September 1941 and has been continuously published since that time. We are proud to be one of the two multi-specialty peer reviewed medical journals in the United States. The other is the New England Journal of Medicine.

We now have a nine or ten month inventory of peer reviewed articles for publication. The number of manuscripts published is directly related to advertising success. Thanks to Michael Roth, our advertising representative, general revenue continues to climb and the Journal continues to operate in the black and demonstrating profitability.

These facts have been presented to Stephanie Aveiro and the HMA President Philip Hellreich MD to make the case for continuing publication of our Journal.

The three manuscripts published in this issue clearly illustrate the diverse interest of our members and readers.

"Attitudes on Organ Donation among Hawaii Physicians" by Linda L. Wong MD and her associates at the Organ Donor Center of Hawaii and the St. Francis Institute of Transplantation who surveyed physicians attending the HMA meeting last year. In the past, Hawaii has had the lowest number of organs donated per million population. Hawaii physicians who, as a group, have a lower proportion of organ donors compared to specialist physicians.

Call the Organ Donor Center of Hawaii at 808-599-7630 and ask for a supply of "Family Information Cards" and brochures for office distribution to further education of physicians, personnel and the public.

The "Update of Hawaii QUEST'S Health Plans Performance, Using Health Plan Employer Data and Information Set" by Matthew Loke PhD and Lynette Honbo MD, is a monumental manuscript and concludes "So far, the QUEST program appears to have delivered an affordable, high quality, health care system to its Medicaid population. Yet, there is still room for improvement, and additional productivity gains, as well as, quality innovation in management, are both attainable." Mahalo for your efforts Dr. Loke and Dr. Honbo.

The third paper in this issue by dentist Gregory G. Steiner on "The Correlation between Cancer Incidence and Kava Consumption" proposes a novel hypothesis of a relationship linking kava consumption and cancer reduction. Kava (Piper methysticum) is an indigenous plant in the Pacific Islands. Because of the increasing use of kava in many cultures, we can expect to hear more about this plant.

Much of the data quoted by Dr. Steiner originated here in Hawaii at the Cancer Research Center by Loic Le Marchand, Jean Hankin, Larry Kolonel and their associates.

The author advises "while the results of this study indicates kava may be an effective cancer chemoprotective agent, no conclusions can be made until further research is completed."

Thank you Dr. Steiner for bringing this to our attention.

Medical School Hotline

The Role of AHEC in Medical Education

Kelley Withy MD
Director, Hawaii AHEC Project
John A. Burns School of Medicine
University of Hawaii at Manoa

The Area Health Education Center (AHEC) is a federal grant funded program through the Bureau of Health Professions branch of the Human Resources and Services Administration. The program goals are to: 1) Improve access to quality health care through appropriate preparation, composition and distribution of the health care workforce and 2) Improve access to a diverse and culturally competent health professional workforce.[1] There are 42 AHEC programs in 37 states.[2] In Hawaii, this grant was initially administered by the nonprofit organization Ke Ola O Hawaii, with matched funding by Queen Emma Foundation.

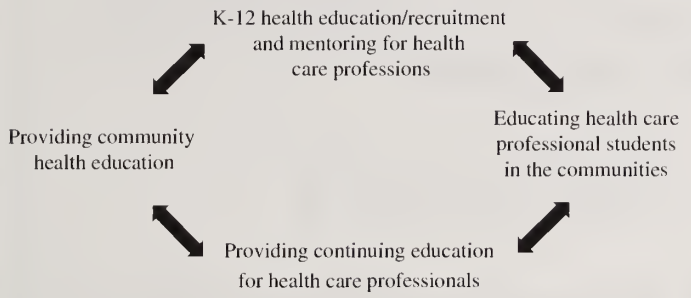
On August 1, 2000, the John A. Burns School of Medicine (JABSOM), the grantee institution, assumed the administration of the grant. In September, the Hawaii AHEC office moved from Leahi Hospital to the School of Medicine on the Manoa campus. Regional AHEC offices are located in Hilo and Lihu'e and soon there will be an AHEC representative on Maui.

The reorganized Hawaii AHEC program has embraced and summarized the above listed goals in a newly developed mission: To improve the health of the underserved in Hawaii through education.

Medical education is the backbone of the Hawaii AHEC program which includes teaching about health and healthcare at many levels. The four interrelated areas of concentration identified by the Hawaii AHEC program are:

1) Provision of community based education in a culturally sensitive and community oriented manner;
2) Health education for K-12 students, as well as recruitment and mentoring for all students interested in health care professions;
3) Training of health care professional students (medical, nursing, dental hygiene, psychology, social work, public health and possibly others) and primary care medical residents in rural and underserved communities, often in multidisciplinary teams;
4) Continuing education for health care professionals in rural and underserved areas.

Together, the four areas are called the Cycle of Aloha because an activity in one tends to facilitate progress in another:



For example, when medical students or residents are assigned to a rural site for a rotation, they help with patient and community education, often teaching and acting as mentors for K-12 students, and inspire their preceptors to stay current on medical literature. The aim is for these students to select a rural or underserved area to provide medical care following residency training.

Programs sponsored by Hawaii AHECs are Community learning centers across the state from Lihue to Hilo; Community prenatal counseling; Kauai Annual Women's Health Fair; "Health Topics of the Tropics," a monthly radio show on Kauai; Health Occupations for Teens Club and tiered mentoring program; Summer Health Academy; Kauai Annual Dental Health Conference; support for health care providers to attend Lono'O ka Makahiki 'O Hawaii and the world indigenous healers conference; and, career fairs across the state. In addition, medical, nursing, dental hygiene, psychology, public health and social work students, as well as and family medicine residents are educated throughout the state in rural and underserved areas, often in multidisciplinary teams. The community based multiprofessional training programs, previously named Ke Ola O Hawaii, have been successful at educating health care professional students and will continue as before, with each education site naming their own program. The overall description will be "community based multidisciplinary training". These programs utilize the community–based education style called service-learning where students not only learn from the community members, but also contribute to the community as part of their education[3].

Currently, an AHEC web page is being developed at the internet site AHEC.Hawaii.edu that will list: 1) Job opportunities for health care professionals in rural and underserved areas of Hawaii; 2) Health care professionals interested in jobs in Hawaii; 3) Educational opportunities for health care professional students as well as information on housing, transportation and funding for students; and 4) CME and CE activities in rural areas of the state. This information will facilitate the placement of health care professionals, students and educational programs to areas of the state where the health needs are the greatest. Also, the AHEC office is establishing inexpensive videoteleconferencing links from JABSOM and the School of Nursing and Dental Hygiene to most areas of the state.

The future plans of the Hawaii AHEC program are to maintain the existing educational programs, increase the recruitment and mentoring of students interested in health careers by coordinating statewide recruiting efforts, and expand programs to educate the community and coordinate community based health education across the state. The AHEC program hopes to do this by opening multiple community learning centers. Each community will determine activities offered at the centers. Community members of all ages can gather at the center, learn about health and participate in healthy activities. There will be rewards for healthy activities that are decided upon by the community and could range from coupons for healthy food or sports equipment, to a community center for a large, sustained group effort. Furthermore, the center director at each of these centers can coordinate other AHEC activities in the area such as: educational programs at schools and businesses, activities for health care professional students, collection of needs assessment information, continuing education programs, health fairs and recruitment activities.

These plans and programs can only be achieved in collaboration with organizations across the state including other health professions schools, rural health associations, Native Hawaiian organizations, Community Health Centers, rural hospitals, residency programs, health care providers, Department of Health, Department of Education, and local foundations. It is anticipated that these organizations will combine their efforts to increase public knowledge of health, encourage health careers in kids across the state, keep providers up to date on medical advances, and meet the health care needs of the state in a culturally competent manner. The statewide Hawaii AHEC office welcomes comments, suggestions and ideas. Contact Kelley Withy MD, Hawaii AHEC Director, with ideas to improve the health of the underserved through education: Withyk@msn.com; Biomedical building T105, phone 956-3167 or 956-9761. For neighbor islands, the regional executive directors are: Bud Cook, bcook12@gte.net; Ke Anuenue AHEC, 1261 Kilauea Avenue, Suite 240, Hilo, HI 96720, 808-935-8658; and Tolly Boyd, tolly@mail.Kaua'icc.Hawaii.edu; Na Lei Wili AHEC, 3-1901 Kaumuali'i Hwy, Lihue, HI 96766, 808-246-8986.

References:

1. Department of Health and Human Services, Health Resources and Services Administration Grant Application, 06/00. Page 13.
2. AHEC; Area Health Education Centers, A National Resource. November 1999 AHEC Newsletter.
3. Seifer S. Service-Learning: Community-Campus Partnerships for Health Professions Education. *Acad. Med.* 1998;73:273-277.

Nurses the  *of Healthcare*

Registered Nurses, Licensed Practical Nurses, Medical Assistants

Qualified and experienced in a wide variety of job settings.

All applicants carefully screened and matched to your specific job.

We are fully responsible for payroll, taxes, benefits and insurance.

Kahu Malama Nurses, Inc.

Short & Long Term Staff Relief and Permanent Placement

Serving Hawaii since 1982 *Available 24 hours*

(808) 951-0111 Fax: 949-3834 **Inter-island: 1-800-773-9021**

e-mail: nurses@kahumalama.com

ARE YOU PAYING TOO MUCH IN TAXES?

Invest in the top rated

Bishop Street Hawaii Municipal Bond Fund

... and keep more of your investment earnings!

Ranked #1 five years straight

(Ranked #1 by Lipper Analytical Services for the 1, 2, 3, 4 and 5 year periods ending 9/30/00 out of 13, 12, 11, 11 and 9 Hawaii Municipal Debt Funds, respectively)

★★★★

Rated 4 stars by Morningstar

(Rated 4 stars for the 3- and 5-year periods ending 9/30/00 out of 1720 and 1472 municipal bond funds, respectively)

- Substantially exempt from federal and Hawaii state income taxes*
- Active portfolio management
- High-quality investment portfolio

For more information and to obtain a prospectus containing important information regarding sales charges and expenses, visit a First Investment Center Investment Specialist, located at your nearest First Hawaiian Bank branch or **call 643-FUND**. Please read the prospectus carefully before investing.

BISHOP STREET FUNDS

*Certain shareholders may be subject to the Alternative Minimum Tax (AMT). Federal income tax rules will apply to any capital gains distributions.

Past Performance is no guarantee of future results. Category rankings are based on total return data provided by Lipper Analytical Services. Rankings are for the institutional class only; other classes may vary.

Morningstar proprietary ratings reflect historical risk-adjusted performance as of 9/30/00. The ratings are subject to change every month. Morningstar ratings are calculated from the fund's three-, five- and ten-year average annual return. The Bishop Street Hawaii Municipal Bond Fund received 4 stars for the three- and five-year periods. The top 10% of the funds in an investment class receive 5 stars, the next 22.5% receive 4 stars, the next 35% receive 3 stars, the next 22.5% receive 2 stars.

Bishop Street Capital Management, an investment subsidiary of First Hawaiian Bank, serves as investment advisor for the Bishop Street Funds. The Bishop Street Funds are distributed by SEI Investments Distribution Co., which is not affiliated with First Hawaiian Bank, Bank of the West or BancWest Corporation. Securities offered through BancWest Investment Services, a registered broker dealer, member NASD/SIPC. Investment Specialists are registered representatives of BancWest Investment Services.

© 2000 Bishop Street Funds

NOT FDIC INSURED, NO BANK GUARANTEE, MAY LOSE VALUE

Attitudes on Organ Donation among Hawaii Physicians

Linda L. Wong MD, Whitney M. Limm MD, Alan H.S. Cheung MD, Chris Carroll RN , and Livingston Wong MD

Abstract

A survey of physicians attending the recent Hawaii Medical Association meeting was conducted in order to assess physician attitudes on organ donation. Physicians were asked 6 questions and demographics were collected. Results indicate that Hawaii physicians generally support organ donation and are aware of some of the current federal legislation regarding donation.

Introduction

Organ donation has increased in Hawaii over the past year. Intensive education of the hospital/physician staff, new federal legislation requiring reporting of all deaths and imminent deaths, and better training procedures for requesting donation have all contributed to this increase. Although we are fortunate to have more organs, we continue to seek ways in which to improve organ donation. Our transplant waiting list continues to grow and patients still die while awaiting organs.

Methods/Materials

Data was obtained from Hawaii physicians who attended the annual meeting of the Hawaii Medical Association on October 31, 1999 in Waikoloa, Hawaii. Each physician attending was given a one-page survey to complete. We asked the following questions:

1. Have you ever been involved in the care of a brain dead patient?
2. Have any of your patients received a transplant or are any currently on the transplant list?
3. Are you an organ donor?
4. Would you put pamphlets on organ donation in your waiting room?

We also asked two true/false questions to assess the physician's familiarity with the process of organ donation and federal regulations.

1. New federal legislation required hospitals to refer potential organ donors to the regional organ procurement organization.
2. A critical factor in influencing a family's decision to donate is the location and time of the request.

Correspondence to:
Linda L. Wong MD
2226 Liliha Street, Suite 402
Honolulu, Hawaii 96817

Finally, demographic data on age, sex, ethnicity and medical speciality was collected on each of the physician's responding to the survey. We divided physicians into two groups: Primary Care (Internal Medicine, Family Practice, and Pediatrics) and Specialist (all others).

Results

Of the 168 physicians who attended the Hawaii Medical Association annual meeting, 58 responded to this survey. Not all physicians answered all of the questions. Demographics were obtained on 46-50 physicians as there were a number of incompletely filled out surveys. Of the 48 physicians who reported demographic data, 38 were male and 10 were female. Age ranged from 30 to 80 years, with mean age of 51.8 years.

Of the 50 physicians reporting ethnicity, the distribution was as follows: Caucasian – 24, Chinese – 11, Japanese – 8, Filipino –2, Hawaiian/Pacific Islander – 3, other Asian – 1, Black – 1.

Medical specialty was distributed as follows: Internal Medicine – 11, Family Practice – 9, Surgery/Surg specialty – 5, Pediatrics – 4, Psychiatry – 4, Obstetrics/Gynecology– 3, Emergency Medicine – 2, and Other – 6.

With regards to the specific questions, 37 of 57 respondees (64.9%) claimed that they have been involved in the care of a brain dead patient. 31 of 58 (53.4%) physicians responding, reported that they have had patients who either received a transplant or have patients currently on the waiting list for an organ transplant.

Of 56 physicians who responded to the third question, 32 (57.1%) stated that they were an organ donor, as listed on their drivers license. Three physicians who claimed not to be organ donors wrote down reasons—2 felt that they were not donors because of age and one claimed to have had hepatitis. There was no difference in the age or sex of those physicians who were donors vs nondonors. A greater percentage of specialist physicians (71.4%) stated that they were organ donors compared to primary care physicians (41.6%) (see table 1 on next page).

Most physicians— 50 of 54 (92.6%) stated that they would be willing to donate the organs of one of their loved ones. Of the four physicians not willing to donate the organs of a loved one, 3 of them were also not donors themselves.

A majority of physicians –50 of 58 (86.2%) would be willing to have pamphlets on organ donation in their waiting rooms. Half of the remaining 8 physicians who would not be willing to have these pamphlets, were not organ donors themselves. No physician in this survey claimed to be a non-donor, refused to donate organs of loved one and refused to have pamphlets on organ donation in their waiting room.

Most (79.1%) of physicians surveyed realized that new federal legislation required hospitals to refer potential organ donors to the regional organ procurement organization. Five physicians were unaware of this legislation and 7 did not respond to this question. All physicians except one were aware that a critical factor in influencing a family's decision to donate is the location and time of request.

Table 1.— Demographics of Organ Donors vs. Organ Nondonors

	Organ Donors (n=56)	Organ Non-donors (n=20)
Sex (Males:Females)	22:4	15:5
Age – range	36-76 years	30-80 years
Age – mean	54.3 years	48.6 years
Age distribution		
Age 30-49 years	8	6
Age 50-64 years	6	12
Age >64 years	7	6
Race:		
Caucasian	15	7
Chinese	6	4
Japanese	2	6
Hawaiian/Pac Isl	2	1
Filipino	1	1
Other	6	5
Specialty		
Primary Care	10	14
Specialist	15	6

Discussion

Organ transplantation remains the standard of care for treatment of end-stage organ disease. The ability of transplant physicians to treat these patients currently is limited primarily by the number of suitable organs. There are currently over 68,000 patients waiting for organs across the United States and nearly 200 waiting in Hawaii.

How does the public feel about organ donation? A poll of 6,127 people prepared by The Gallup Organization Inc, in 1993 showed that 85% supported the donation of organs for transplants. Of the polled population, 69% stated that they would be very/somewhat likely to donate their own organs. Twenty-five percent were felt that they were not likely to donate their own organs. The majority of the respondents who did not feel likely to donate gave no particular reason—they didn't know or had not given it much thought. Some of the other reasons included: medical reasons, too old, "don't want body cut up," "don't feel right about it," and religion.[1]

Peters et al interviewed 102 people—51 who stated that they were organ donors and 51 who claimed to be nondonors. Those who were donors tended to be more medically sophisticated and positive. They were more knowledgeable about the concept of brain death and felt that organ transplantation was effective. Nondonors, on the other hand, were more pessimistic and mistrustful of medicine. Comments included "A wealthy person will get the kidney," "it won't be done equitably," "doctors program the computer (for matching)" and "is it (the computer list) categorized by race?" [2]

But how about the health care professionals—what are their attitudes on organ donation? Molzahn et al surveyed 147 critical care nurses in Canada in 1997. Over 92% supported organ donation in principle, but only 65.3% had completed organ donor cards. Attitudes on organ donation were generally positive, but 85% of the nurses surveyed felt reluctant to approach potential donors. [3]

A study of 896 health care professionals in Louisiana including 59 neurosurgeons, 125 emergency medicine physicians, 267 critical care nurses and 445 other physicians revealed that they were generally satisfied with the organ procurement and transplantation system. There were still some concerns which included: lack of support by medical and lay community, high costs, potential profiteering, racial bias, organ request strategies, and conflict of interest.[4]

Weber et al, in a study of 759 physicians in Germany revealed that there was an overwhelming support for organ donation. Only 40% of physicians however, actually carried an organ donor card. Younger physicians and women were more likely to possess an organ donor card. The strongest predictors of willingness to donate one's own organs were (1) trust that doctors will act on behalf of the patient, even if he has a donor card, (2) security of death certification and (3) justice in organ allocation. [5]

Training of critical care nurses and physicians is essential to improve the rate of donation. Evanisko et al surveyed 1061 critical care staff from 28 hospitals in 4 different regions in the United States. Questionnaires assessed (1) factual knowledge about organ donation, (2) understanding of brain death, (3) previous training in procedures for requesting donation and (4) comfort levels with the donation process. Factual knowledge on donation and brain death were similar in various hospitals. In hospitals with high rates of organ donation, 52.9% of staff had received training. Those with low rates of organ donation, only 23.5% of staff had received training.[6]

In addition to appropriate training, federal regulations are helping to increase organ donation. In 1998 the Health Care Financing Administration (HCFA) issued Hospital Conditions of Participation for Organ, Tissue and Eye Donation that would require hospitals to refer all deaths and imminent deaths to Organ Procurement Organizations. This would allow identification of potential donors so families can be asked about donation. Both HCFA and the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) will evaluate hospital compliance of these new standards.[7,8]

In the past, Hawaii has had the lowest number of organ donors of any state and also has had the lowest number of organs per million population. Intensive education of the hospital and physician staff as well as the general public has allowed our organ procurement organization (Organ Donor Center of Hawaii) to markedly improve the number of organs available for transplant in Hawaii. In 1999, 26 organ donors allowed 70 patients to receive transplants. This was the

Continues on p. 424

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA

Our pledge to you

As Straub physicians, we welcome your referrals... and pledge to:

- Report our evaluation to you promptly by phone, fax or mail (whatever you prefer).
- Never make secondary referrals without your approval.
- Always direct the patient back to you for continuing care.

To make your referrals easy, we have a Physician Referral Specialist, Kym Kaohi. To contact Kym and to get a binder on Straub specialists and services, call 522-4444.



KYM KAOHI, MA • PHYSICIAN REFERRAL SPECIALIST



For assistance, call Kym at 522-4444

Straub
Partners in health
straubhealth.com

An Update of Hawaii QUEST's Medical Plans' Performance, Using HEDIS Measures, 1997-1998

Matthew Loke PhD and Lynette Honbo MD

What is HEDIS 3.0/1998?

Since the inception of the QUEST program, participating health plans have been reporting Health Plan Employer Data and Information Set (HEDIS[1]) performance measurements. In the previous two state fiscal years, QUEST health plans were required to submit *Medicaid 2.0/2.5* measures to the Med-QUEST Division[2] (MQD) for an annual quality assessment of health care services. In May 1998, the QUEST Medical Directors and the MQD made a joint decision to adopt technical and format specifications outlined in *HEDIS 3.0/1998,* as the basis of HEDIS reporting requirements by health plans for the 1998 state fiscal year.[3] *HEDIS 3.0/1998* is the third version of HEDIS released by the National Committee for Quality Assurance (NCQA) — a non-profit organization committed to evaluating and publicly reporting on the quality of managed care plans. *HEDIS 3.0/1998* was designed to provide the same measurement standards between Medicaid beneficiaries, commercial enrollees and Medicare risk populations. This is the first attempt to measure and compare public and private managed care populations objectively and efficiently.

What is measured in HEDIS 3.0/1998?

HEDIS 3.0/1998 contains over 50 measures,[4] organized in the following eight (8) reporting categories or domains:

- Effectiveness of Care;
- Access/Availability of Care;
- Satisfaction with the Experience of Care;
- Health Plan Stability;
- Use of Services;
- Cost of Care;
- Informed Health Care Choices; and
- Health Plan Descriptive Information.

Health plan performance for all the above categories is reported as tables. The Effectiveness of Care domain assesses the impact of care delivered to certain segments of plan membership. Generally, the measures apply to members continuously enrolled for 12 months with a maximum lapse in coverage of 45 days. Access/availability of care measurements relate to the availability of services to plan members.

The Satisfaction with the Experience of Care domain assesses how members view the plan in meeting their health care needs and expectations. Health Plan Stability measures look at the stability of a health plan and any changes that could disrupt care to its members. Next, the Use of Services domain provides information on utilization of resources, and the Cost of Care measures evaluate the overall cost to the plan and rate trends to plan members.

Then, the Informed Health Care Choices domain looks at how well the plan assists members to remain active in health care planning and to make informed choices about treatment options. Finally, Health Plan Descriptive Information and Use of Services measures relate to all members in the plan.

What categories must QUEST plans report?

The QUEST medical plans must report measures relating to Effectiveness of Care, Access/Availability of Care, Health Plan Stability, Use of Services, and Health Plan Descriptive Information. Since all QUEST plans must submit a yearly financial statement, and the MQD conducts an annual customer satisfaction survey, medical plans were not required to report *HEDIS 3.0/1998* categories relating to Cost of Care, and Satisfaction with the Experience of Care. The Informed Health Care Choices domain currently does not contain any measures in the reporting set.

What should be considered in reviewing QUEST HEDIS 3.0/1998?

The information presented is an aggregation of data submitted by individual QUEST medical plans with complete reports. Since *HEDIS 3.0/1998* specifications allow for data collection using various specified methodologies, the QUEST plans may select different allowable methodologies to report the same measure. Therefore, differences in data sources and data collecting methodologies may affect the validity of the aggregate data presented. Additionally, while the QUEST plans reviewed their individual reports and verified their data prior to submission, the MQD does not audit each plan's data. However, the MQD executes a strict protocol to examine the contents for accuracy and consistency. QUEST plans here must justify or rerun specific measures, based on the MQD's review.

What HEDIS 3.0/1998 measures are reported?

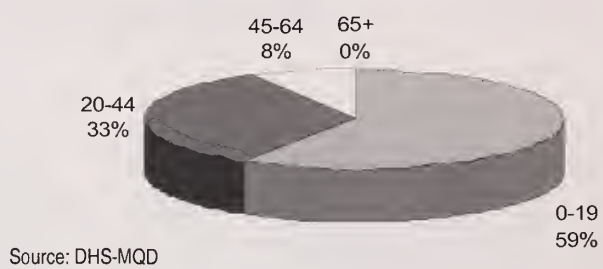
The QUEST plans reported a total of 38 mandatory measures under

Correspondence to:
Matthew Loke, PhD and Lynette Honbo, MD
State of Hawaii
Department of Human Services
Med-QUEST Division
Health Care Management Branch and
Medical Standards Branch
P.O. Box 339
Honolulu, HI 96809-0339

HEDIS 3.0/1998. The collection of these measures is available from the MQD.[5] This narrative report focuses on ten (10) key measures which are frequently used in assessing a medical plan's performance in providing quality care:

1. Membership by Age and Sex;
2. Childhood Immunization Status;
3. Cervical Cancer Screening;
4. Prenatal Care in the First Trimester;
5. Low Birth-Weight Babies;
6. Eye Exams for People with Diabetes;
7. Follow-up After Hospitalization for Mental Illness;
8. Children's Access to Primary Care Providers;
9. Outpatient Drug Utilization; and
10. Inpatient Utilization - General Hospital/Acute Care.

Exhibit 1



Source: DHS-MQD

I. Membership by Age and Sex

Why is this important?

This measure provides a demographic profile of the QUEST population and answers general questions about people who are receiving their health care services from QUEST.

What was measured?

The unduplicated count and member months of QUEST members by age and sex, enrolled during any part of the reporting year (July 1, 1997 to June 30, 1998) were recorded.

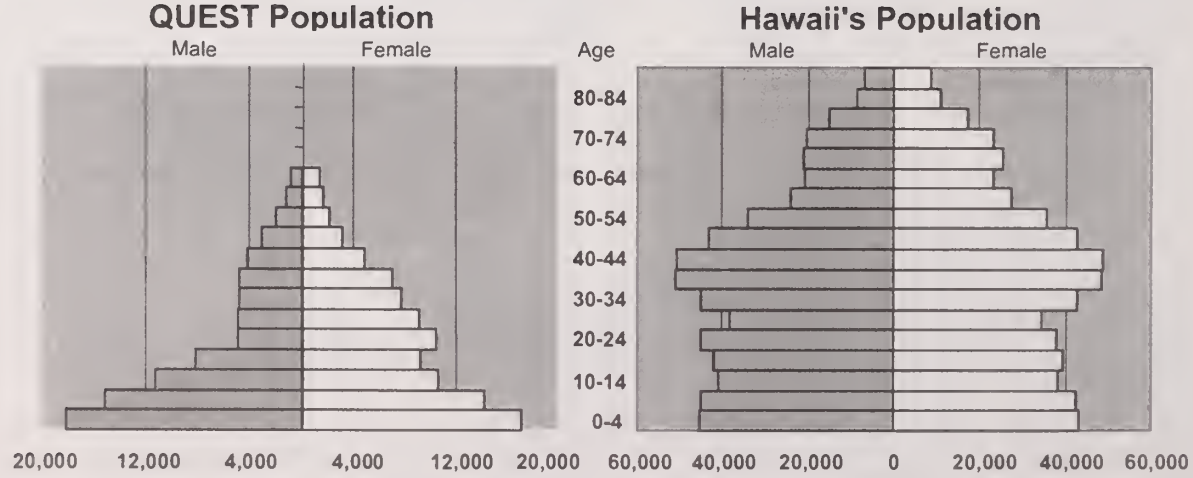
How did QUEST perform?

Enrollment in the QUEST program has stabilized, recording 182,902 members in fiscal 1998, compared to 180,684 members in fiscal 1997, and 192,296 members in fiscal 1996. The QUEST population in fiscal 1998 was also the youngest in three consecutive years. The mean age of QUEST members dropped to 19.8 years in fiscal 1998, from 20.1 years in fiscal 1997, and 21.3 years in fiscal 1996.[6] QUEST members remain predominantly children and women. Approximately 57 percent of total membership in fiscal 1998 were children under 20 years of age, up one (1) percent from the previous year. The proportion of children in the program is even higher, when counting by member months. The HEDIS member months measure indicated that approximately 59 percent of total member months in fiscal 1998 were accounted for by children under 20 years of age. The 20-44 years, age cohort, accounted for another 33 percent of all member months in fiscal 1998. Exhibit 1 summarizes the distribution of member months by selected age cohorts.

Another useful demographic approach is to evaluate the age and sex distribution of a population for a given fiscal year, and then summarizing it graphically with a "population pyramid." A population pyramid displays the distribution of male and female members in different age groups. Exhibit 2 below shows the QUEST population structure in fiscal 1998, as compared to Hawaii's resident population in July 1997.[7] The QUEST population displays a skewed, classic "pyramid", with a large proportion of younger people, fewer middle-aged people, and far fewer near-elderly people. There is also a disproportionate cohort of middle-aged women.

In contrast, the Hawaii resident population structure resembles a

Exhibit 2



Sources: DHS-MQD and DBEDT

bulging "pillar." This is a more mature population, with proportionately fewer young people (ages 0-29) contributing to the total. The middle-aged group (ages 30-49) is the dominant segment of this population structure while the near-elderly (ages 50-64) and elderly (ages 65 and over) groups appear rather significant, before tapering off. The difference between the Hawaii population structure and that of QUEST for the elderly cohort can be explained by current QUEST eligibility requirements, which preclude enrollment of individuals over 65 years of age. Elderly individuals, qualifying for Medicaid, are enrolled in the fee-for-service (FFS) program.

II. Childhood Immunization Status

Why is this important?

Immunization in the first two years of life is accepted as one of the most effective public health measures in preventing serious illnesses such as whopping cough, polio, measles, and hepatitis B. Unfortunately, studies have shown that low-income children are less likely to receive timely immunizations. In 1990, the Centers for Disease Control (CDC) reported that less than 50 percent of low-income, inner city children were fully immunized by age two.

What was measured?

In QUEST, the childhood immunization rate is the percentage of two-year olds who were enrolled in one plan for 12 months, and who had received appropriate immunizations by their second birthdays. (A break in enrollment not to exceed 45 days was allowed.)

How did QUEST perform?

QUEST did relatively well when compared to the previous year, and to rates reported in other studies. The childhood immunization rate was 75.2 percent in fiscal 1998, marginally lower, compared to 77.4 percent in fiscal 1997 but much higher than the 62.5 percent rate in fiscal 1996 (see Exhibit 3). The rate in fiscal 1998 would likely be higher, if not for delays in plan changes, arising from a contractual dispute/negotiated settlement between the State and the medical plans. An estimated, 800 beneficiaries, under two (2) years of age, on Maui and Kauai were required to switch medical plans, two months into the fiscal year. Consequently, these children were not counted in many HEDIS measures because they did not qualify for 12 months of continuous enrollment, in any one plan.

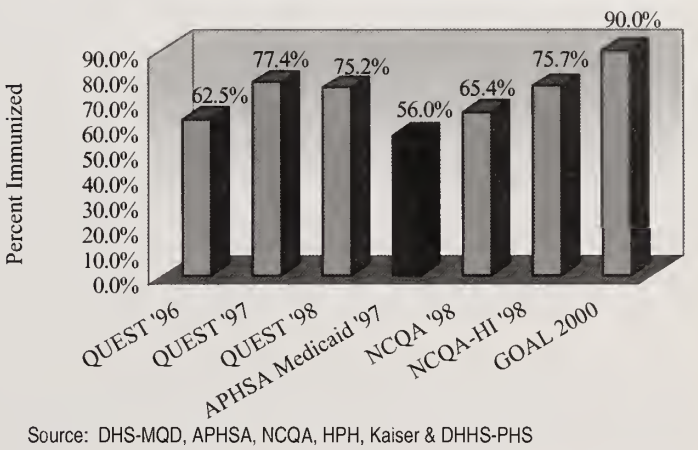
Despite the slightly lower immunization rate in fiscal 1998, the QUEST plans comfortably beat two important national averages. The NCQA released its second annual edition of "The State of Managed Care Quality." This report collected information voluntarily submitted by 447 managed health plans, covering 60 million Americans throughout the United States. The NCQA reported that the national average rate of children who had received 4 DPT/DTaP (diptheria-tetanus-pertussis), 3 polio (OPV/IPV), 1 MMR (measles-mumps-rubella), 1 Hib (H influenza type b), and 2 HepB (Hepatitis B) was 65.4 percent for all health plans which submitted data.[8] The QUEST plans exceeded this national average for commercial plans as reported by the NCQA.

Secondly, the American Public Human Services Association (APHSA) also issued its newly created "benchmarks" on selected *Medicaid HEDIS* measures.[9] This new set of nine (9) measures were calculated from information submitted by 111 health plans, spread across 18 states, participating in this pioneer project. The QUEST plans exceeded the national rate of 56 percent as reported by the APHSA.

In addition, the QUEST plans' rate came close to the average rate for Hawaii's two NCQA accredited managed care plans.[10,11] The two commercial plans' reported an average rate of 75.7 percent. Finally, retrospective studies done in Hawaii on children entering kindergarten have shown that between 58-63 percent received the basic series by age 2.

The "Healthy People 2000" goal is to increase to 90 percent the proportion of children up to 2 years of age who are fully immunized.[12] "Healthy People 2000" is a set of national health promotion guidelines and disease prevention objectives, managed by the U.S. Public Health Service (DHHS-PHS).

Exhibit 3



Source: DHS-MQD, APHSA, NCQA, HPH, Kaiser & DHHS-PHS

III. Cervical Cancer Screening

Why is this important?

In 1994, approximately 15,000 new cases of cervical cancer were diagnosed and 4,600 women in the United States died from the disease. Additionally, the rate of cervical cancer is higher among minority and economically disadvantaged women, and they are more likely to be diagnosed when the cancer is in advanced stages. Fortunately, cervical cancer is curable if detected early by regular check-ups and use of the Papanicolaou (Pap) smear test. Thus, for QUEST women, cervical cancer screening is very important and saves lives.

What was measured?

The cervical cancer screening rate is the percentage of women, ages 21 to 64, enrolled in one plan for 12 months, who had at least one Pap smear during the past three years.

How did QUEST perform?

The QUEST plans did not report this measure in fiscal 1996. In fiscal 1995, the reported rate was 33.8 percent. The 1995 rate was for the first eleven (11) months of QUEST, and was reported by four (4) of the five (5) plans. Furthermore, the plans did not have three years worth of data as required by the measure.

In fiscal 1998, the screening rate reported was 65.4 percent, down from 70.2 percent in the previous year. The lower screening rate reported is attributed to several factors. First, there was the delay in plan changes, which disqualified many female beneficiaries from satisfying the 12 months of continuous enrollment. Second, the definition of women included in the measure was changed to 21-64 years of age in *HEDIS 3.0/1998* from 16-64 years in *Medicaid HEDIS*. Given the large number of QUEST beneficiaries in the younger age range, the change in definition resulted in fewer women being counted in the measure. Third, a major medical plan made methodology changes to the measure, which resulted in a much lower rate. As a consequence of the above factors, the number of eligible beneficiaries was lower compared to the previous year. The increase in days allowable for satisfying continuous enrollment from 30 to 45 did not appear to have any noticeable impact on this measure.

Despite these shortcomings, the QUEST plans' screening rate exceeded the national Medicaid average of 63 percent as reported by the APHSA (see Exhibit 4). It was also close to a timely released NCQA study which reported a 71.3 percent national average for women ages 21 to 64 in participating health plans. The average rate for Hawaii's two NCQA accredited managed care plans was identical to QUEST at 71.3 percent. The "Healthy People 2000" goal is to have 85 percent of women receive a Pap smear every one to three years.

IV. Prenatal Care in the First Trimester

Why is this important?

Timely, thorough and adequate prenatal care in the first trimester can effectively help reduce a mother's likelihood of delivering a low birth-weight infant. Likewise, early prenatal care can help to detect and address maternal health problems early in the pregnancy. Medical problems are often easily corrected when detected and treated early. Otherwise left untreated, they may threaten the health of both mother and unborn child.

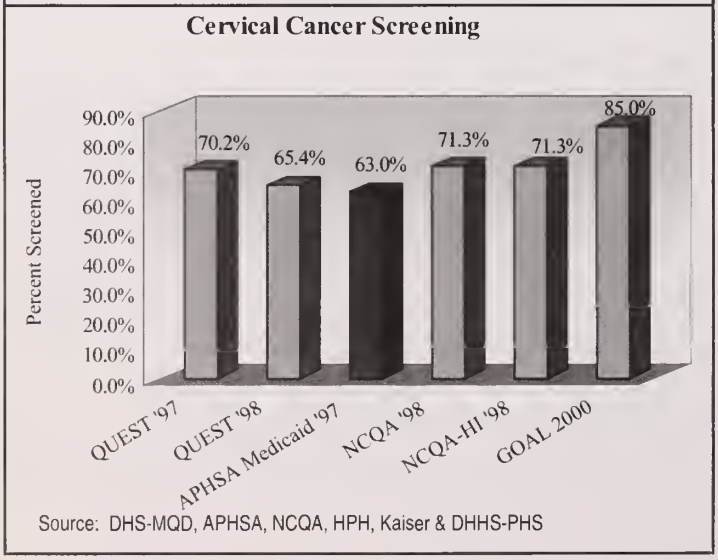
What was measured?

The prenatal care rate is the percentage of women who delivered a live baby, and had received prenatal care in the first three (3) months of pregnancy.

How did QUEST perform?

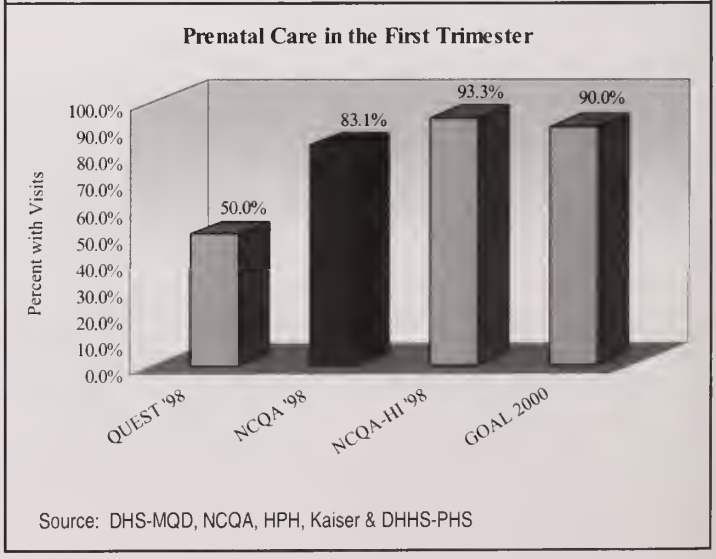
This measure was used for the first time by QUEST plans. The QUEST rate was 50 percent, compared to the NCQA's average of 83.1 percent. Exhibit 5 illustrates QUEST's performance with other important benchmark measures. The lower rate for QUEST is not an attribute of poor performance. Rather, it is a manifestation of the measure and compounded by the unique characteristics of the QUEST program. Pregnant women are eligible up to 185 percent of the Federal Poverty Level (FPL) and assets are not counted (non-payment applies to individuals under 100 percent of the FPL and they are subject to limited assets). Therefore, many women apply to the QUEST program after they become pregnant. Despite an expedited eligibility and enrollment process at the time of enrollment, these women are often beyond their first trimester. Hence, these eligible women with eventual live births were counted in the denominator, but they have no recorded prenatal care visits for the first trimester, as measured in the numerator. Consequently, the measure is biased downwards. Despite QUEST's performance in this measurement, eligible pregnant women do have access to prenatal care. Many pregnant women, eligible for QUEST and pending enrollment into a medical plan, have access to prenatal care through services covered under the fee-for-service (FFS) Medicaid program. Unfortunately, those FFS visits are not included in the HEDIS report.

Exhibit 4



Source: DHS-MQD, APHSA, NCQA, HPH, Kaiser & DHHS-PHS

Exhibit 5



Source: DHS-MQD, NCQA, HPH, Kaiser & DHHS-PHS

V. Low Birth-Weight Babies

Why is this important?

Low birth-weight infants face higher risk for chronic and permanent disabilities, serious medical complications and illnesses, and death in infancy. Low-income women are typically at higher risk for having low birth-weight infants. There are many factors that can increase a woman's risk of having low birth-weight infants. Some of the more common factors include smoking, poor nutrition and chronic medical conditions. Many of these risk factors can be managed by timely and comprehensive prenatal care. Careful management of women at high risk for premature delivery can reduce the possibility of having an underweight baby.

What was measured?

The percentage of low birth-weight (less than 2,500 grams or 5.5 pounds) babies born during the fiscal year was measured using hospital discharge data or birth certificate data.

How did QUEST perform?

In fiscal 1998, the low birth-weight rate for the QUEST population dropped to 5.2 percent from 5.8 percent in the previous year. Exhibit 6 shows the QUEST plans performed very well in this measure compared to its commercial peer, and is very close to the Healthy People 2000's goal of 5.0 percent. In this measure, a lower percentage rate of low birth-weight infants is desirable. The QUEST plans' low birth-weight rate of 5.8 percent in fiscal 1997 was also better than the statewide rate of 6.7 percent, reported by Hawaii's Department of Health.

VI. Eye Exams for People with Diabetes

Why is this important?

Diabetes mellitus affects approximately 6.5 percent of Hawaii's population and is the leading cause of severe eye damage and adult blindness in the United States. However, blindness may be prevented if retinal changes are detected early, and treated appropriately with laser. Therefore, early intervention through effective screening is crucial in preserving the eyesight of individuals with diabetes.

What was measured?

The diabetic eye exam rate is the percentage of diabetic adults, ages 31-64, who received a retinal (eye) exam in the past year.

How did QUEST perform?

Although the QUEST plans' rate of 40.2 percent in fiscal 1998 was slightly lower compared to 42.6 percent recorded in fiscal 1997, it nevertheless, exceeded the NCQA national average of 39 percent. The slightly lower rate in fiscal 1998 is statistically more robust, considering that five plans reported the measure compared to only two plans reporting in fiscal 1997 (then an optional measure for QUEST plans). Exhibit 7 shows the rate for different populations. Despite a credible performance in its first plan-wide reporting, QUEST trails behind the 54 percent, average rate for NCQA accredited managed care plans in Hawaii.

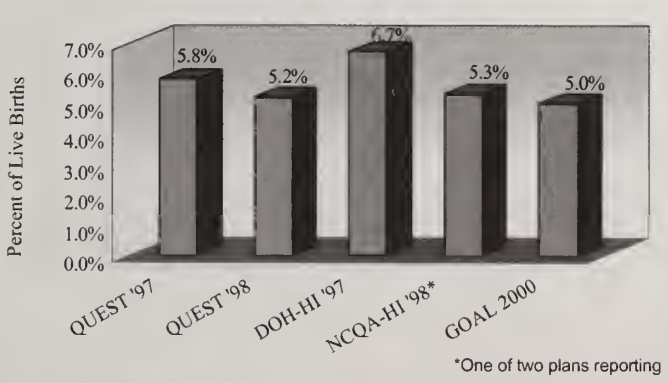
VII. Follow-up After Hospitalization for Mental Illness

Why is this important?

The National Institute for Mental Health (NIMH) has reported that a significant percentage of individuals experience some form of mental illness, including manic depression, paranoia and schizophrenia. However, only a small proportion of these individuals is medically diagnosed. Suicide, the most serious risk to those with mental illness, caused 15 percent of the deaths associated with untreated mood disorders. Those deaths may occur, four to five years after the first clinical episode.

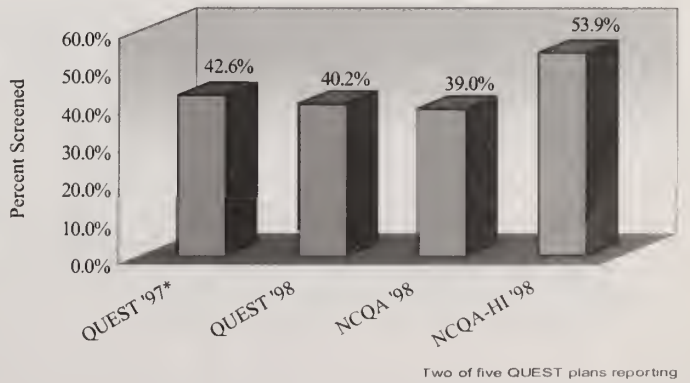
It is therefore important to provide regular follow-up therapy to patients after they have been hospitalized for mental illness. An outpatient visit with a mental health provider within 30 days of discharge is important for the orderly transition to the home or work

Exhibit 6



Source: DHS-MQD, DOH, NCQA & DHHS-PHS

Exhibit 7



Source: DHS-MQD, NCQA, HPH & Kaiser

environment. Such a visit would also help the mental health provider to track the effectiveness of prescribed drug therapies or to detect any possible post-hospitalization reactions.

What was measured?

This particular measure estimates the percentage of members, hospitalized for treatment of a major affective disorder and were seen by a mental health provider within 30 days of discharge.

How did QUEST perform?

In fiscal 1998, the number of beneficiaries receiving follow-up after hospitalization for mental health continued to increase. In fiscal 1997, the follow-up rate was 53.1 percent. In fiscal 1998 the rate increased to 56.2 percent. Exhibit 8 shows the QUEST rate was rather low compared to the NCQA national average of 72.3 percent. However, the QUEST plans exceeded the average rate of 51.6 percent for NCQA accredited managed care plans in Hawaii. The lower rate for the QUEST plans may be the result of the seriously mentally ill (SMI) adults, who are enrolled in a separate QUEST behavioral managed care "carve-out" plan called Community Care Services (CCS). Data from CCS was not included in the HEDIS report.

VIII. Children's Access to Primary Care Providers

Why is this important?

Opponents of managed care often claim that members have a difficult time obtaining appropriate health care services in a timely manner. There is an ongoing concern about access to the existing health delivery system, and especially, in a time of need. In general, children are more susceptible to illnesses or injuries arising from accidents, and hence have a greater propensity to require health care services. Additionally, children accounted for 57 percent of total QUEST membership. Hence, visits to pediatricians, family physicians, and other primary care providers is an indicator of general access to health care services for children.

What was measured?

The proportion of children in QUEST who registered a visit with a health plan primary care provider during the reporting year was measured. (A break in enrollment of up to 45 days was allowed.) Measurements were recorded for three separate groups of children: (i) infants (age 12 months to 24 months); (ii) pre-schoolers (age 25 months to 6 years); and (iii) pre-teens (age 7 years to 12 years).

How did QUEST perform?

QUEST's performance was mixed in this measure. The children's access rate to primary care providers in QUEST were 90 percent for infants, 80 percent for pre-schoolers, and 76 percent for pre-teens (see Exhibit 9). The QUEST plans exceeded the national Medicaid average, as reported recently by the APHSA in every category. However, in comparison to NCQA accredited managed care plans in Hawaii, QUEST could only match the former's rate in the infant category. In both the pre-schooler and pre-teen categories, QUEST lagged some 13-14 percentage points behind. We believe QUEST performance in this measure will improve in future. In this reporting year, one QUEST plan reported lower than expected rates, which subsequently reduced the overall rates.

IX. Outpatient Drug Utilization

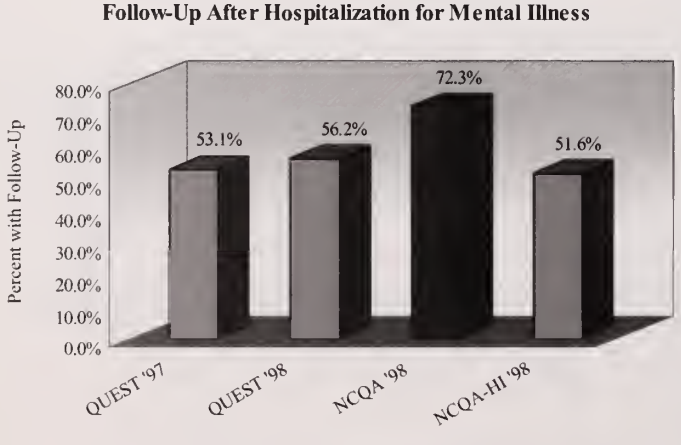
Why is this important?

This measure summarizes data on outpatient utilization of prescription drugs by age group. Hence it assists medical plans and the MQD to assess how cost effective the QUEST drug benefit is being administered.

What was measured?

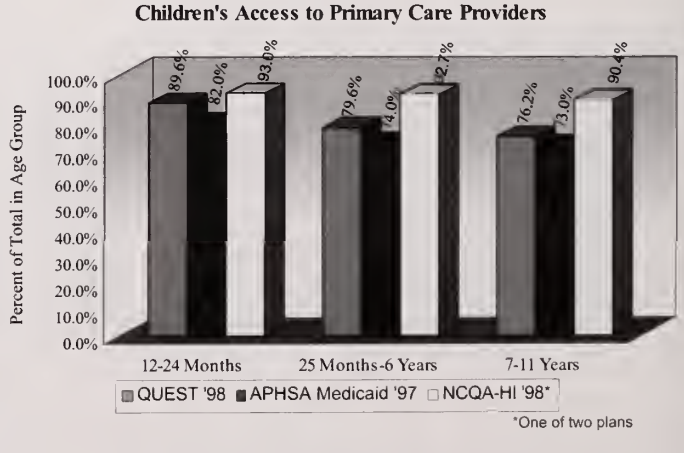
Some information reported in this measure include the total cost of prescription drugs, the average cost per member per month, the total number of prescriptions filled, and the average number of prescrip-

Exhibit 8



Source: DHS-MQD, NCQA, HPH & Kaiser

Exhibit 9



Source: DHS-MQD, APHSA & HPH

tions filled per year for QUEST members of different ages.

How did QUEST perform?

In fiscal 1998, the cost per member per month (PMPM cost) of the QUEST prescription drugs increased to $13.47, an increase of 12 percent from $12.03 in the previous fiscal year. The average number of prescriptions filled also increased from 7.7 prescriptions PMPM in fiscal 1997 to 8.2 prescriptions PMPM in fiscal 1998. The higher utilization rate and higher market price of prescription drugs during the year were primarily responsible for the higher overall drug costs. This marks a turnaround of the downtrend in QUEST drug costs in the previous two years.

Despite the upward bias in drug costs, Exhibit 10 shows that PMPM cost facing QUEST is still 7.5 percent below the average PMPM cost for NCQA accredited (commercial) managed care plans in Hawaii. The MQD feels that the lower average PMPM may be explained by the fact that QUEST plans have a younger population, of which 57 percent were children, with lower propensity for prescribed drugs as compared to an older population (with more chronic conditions). In addition, QUEST plans are allowed to develop their own formularies, subject to minimum requirements as established by the MQD. Furthermore, the NCQA commercial plans in Hawaii offer different drug benefits so their costs are not directly comparable with QUEST.

X. Inpatient Utilization - General Hospital/Acute Care

Why is this important?

Acute inpatient care in hospitals is one of the most costly expenses of a medical plan. It is therefore important for medical plans to monitor for excessive utilization of inpatient services or likewise for an insufficient level of care.

What was measured?

The total number of QUEST enrollees who received acute inpatient care in hospitals and the category of care they received (medical, surgical and maternity) by age were measured. Non-acute care, mental health, chemical dependency and newborn care services were excluded. This measure is expressed as discharges per 1,000 member months. The total number of hospital days by category of care and the average length of stay (ALOS) were also reported.

How did QUEST perform?

There were fewer discharges and fewer inpatient days reported in the 1998 fiscal year, which were consistent with a stabilized population in the QUEST program. The lower figures may also be associated with stricter data reviews and an improvement in claims processing procedures, as reported by some medical plans. The QUEST ALOS for total inpatient care remained unchanged at 3.4 days.

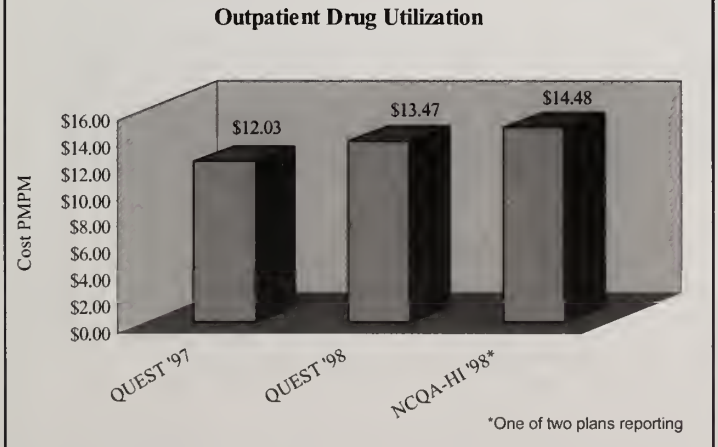
In the same fiscal year, the QUEST inpatient discharge rate was 7.2 discharges per 1,000 member months. This rate was lower than the hospital discharge rate of 7.7 per 1,000 member months for Hawaii State in 1997.[13] In contrast, the QUEST rate was higher when compared to Hawaii's NCQA accredited managed care plans. This higher rate is not unexpected, considering that QUEST has a higher proportion of expectant mothers, and consequently a higher frequency of maternity discharges.

Managed Care in QUEST

In September 1997, Kapiolani HealthHawaii became a QUEST health plan and immediately began providing services to approximately 10,700 eligible persons. With Kapiolani's participation, QUEST members were able to choose from six (6) QUEST medical plans. These medical plans are unique with six (6) different approaches to the delivery of medical care and six (6) different structures and organizational experiences. A summary description of the QUEST medical plans is as follows:

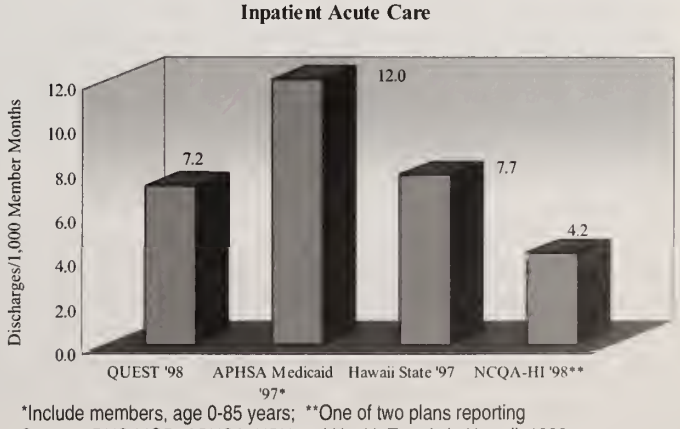
- **AlohaCare** is a plan, formed by local community health centers, and QUEST is its single line of business;
- **HMSA-QUEST** is a plan, owned by a local, non-profit, mutual

Exhibit 10



Source: DHS-MQD & HPH

Exhibit 11



*Include members, age 0-85 years; **One of two plans reporting
Source: DHS-MQD, APHSA, HPH and Health Trends in Hawaii, 1999.

benefit society, associated with Blue Cross/Blue Shield, with many commercial and government lines of business;

- **Kaiser Permanente QUEST** is a plan, owned by a large, nationally affiliated, non-profit Health Maintenance Organization (HMO);
- **Kapiolani HealthHawaii** is a plan, owned by a local, non-profit health care system, with close affiliation to a tertiary care hospital for women and children;
- **Queen's Hawaii Care** is a plan owned by a local, non-profit health care system with close affiliation to a comprehensive medical center; and
- **Straub Care Quantum** is a plan owned by a local, for-profit health care system.

Kaiser Permanente QUEST and **Straub Care Quantum** can be best described as "closed panel" medical plans because the care they provide is largely performed by staff physicians in their own clinics and facilities. **AlohaCare, HMSA-QUEST, Kapiolani Health Hawaii** and **Queen's Hawaii Care** are "open panel" medical plans which contract with health care providers to provide care at various sites, largely the providers' offices and facilities.

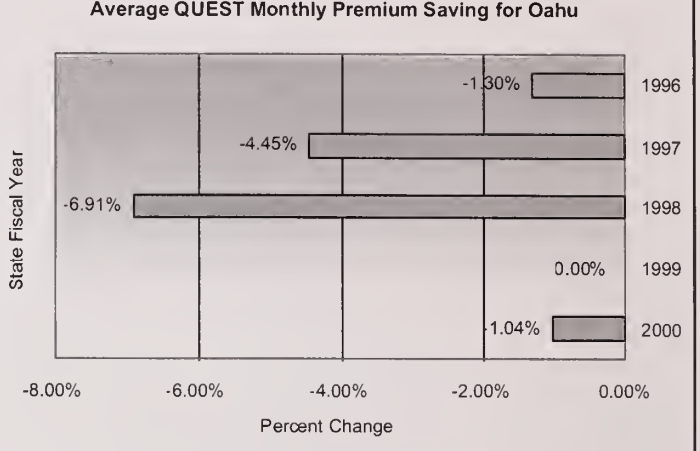
Despite their differences in structure and management styles, each QUEST medical plan utilizes managed care concepts in the provision of health care services to QUEST members. These key concepts include the application of case management, utilization management, new member orientation or education, and standards for waiting times.

Cost Containment in QUEST

Since the QUEST program was implemented in August 1994, there has been continuous premium saving being realized for each enrolled member. In the first fiscal year of operation, the premium saving was approximately 6.4 percent per member,[14] compared to equivalent payment under the fee-for-service (FFS) program. Thereafter, more premium saving was achieved in subsequent years. Reflecting this trend, Exhibit 12 shows the average QUEST monthly premium for Oahu. In the 1996 fiscal year, the monthly premium on Oahu was 1.3 percent lower than that in fiscal 1995. In both fiscal 1997 and fiscal 1998 contracting years, the QUEST program received more favorable premium saving. The QUEST monthly premium for Oahu dropped by 4.45 percent and 6.91 percent respectively. No premium saving was realized in fiscal 1999, due to the two-year contract reached in fiscal 1998.

In fiscal year 2000, a new, three-year contract with the QUEST medical plans, went into effect. The monthly premium saving on Oahu was 1.04 percent lower than the rate in the previous contract agreement (fiscal 1998). It is noteworthy that all premium savings over time have been realized without compromising quality health care services to QUEST enrollees. The QUEST annual customer satisfaction survey and selected HEDIS measures have strongly supported this contention. We believe that participating medical plans have made enormous progress in productivity gains and continuous quality improvements in both clinical and administrative areas. Five of the six existing plans in QUEST have been participating in the program since its inception in August 1994.

Exhibit 12



Source: DHS-MQD

Conclusion

Despite contractual changes in the 1998 fiscal year, QUEST's overall performance compares favorably with national and state benchmark measures in both commercial and Medicaid populations. The QUEST average (mean) was comparable, or exceeded national or state benchmarks, in seven of nine measures, discussed in this paper. Notwithstanding the demonstrated quality of care offered by QUEST in the current HEDIS report, continuous improvement opportunities exist in two measures — "Prenatal Care in the First Trimester" and "Follow-up After Hospitalization for Mental Illness." Under existing reporting guidelines, eligible, but not enrolled individuals and "carve-out" populations were excluded. Future efforts to include these populations will provide a more complete and accurate HEDIS reporting framework for QUEST. In addition, it may be useful to implement a rotation of HEDIS measures, so as to provide a broader base of quality indicators. However, one potential constraint remains. This relates to a lack of comparable benchmark data at both the national and state levels.

Finally, the reasonable quality of health care services provided to QUEST members has been achieved and maintained with lower monthly premiums over the years. As of July 1, 1999, the average monthly premium for Oahu has dropped by 13.1 percent since QUEST's inception in August 1994. This translates into a mean, nominal cost saving of 2.74 percent per annum. In contrast, the Consumer Price Index (CPI) for medical care in Honolulu has been rising steadily at the rate of 2.64 percent per annum during the same time period. If we were to consider the real (inflation adjusted) premium saving rate for QUEST on Oahu, it will average 5.38 percent, per year. This is a significant premium saving to QUEST. Thus far, the QUEST program has delivered an affordable, quality, health care system to its Medicaid population. Both the MQD and QUEST plans believe there is still room for improvement in productivity and quality innovations in management.

Continues on p. 424

FIVE WAYS TO DIE ON THE GOLF COURSE:

1. Hit by a golf ball.
2. Run over by a golf cart.
3. Whacked by a golf club.
4. Struck by lightning.
5. Forgot your hat.

Surprisingly, one million new cases of skin cancer are detected every year. One person an hour in the U.S. dies from melanoma, the deadliest form of skin cancer. If you spend a lot of time in the sun, you should protect yourself. One out of five Americans develops skin cancer during their lifetime. Don't be one of them. Stay out of the midday sun. Cover up. Wear a hat. Seek shade. And use sunscreen. For more information on how to protect yourself from skin cancer, call 1-888-462-DERM or visit www.aad.org.

AMERICAN ACADEMY OF DERMATOLOGY

The Correlation between Cancer Incidence and Kava Consumption

Gregory G. Steiner DDS, MS

Background. A number of countries in the South Pacific have very low cancer incidence. In spite of a high percentage of the population habituated to tobacco, the cancer incidence in countries such as Vanuatu and Fiji experience age-standardized cancer incidence in the 70's. A number of studies have noted the low cancer incidence in these countries and have postulated that a dietary chemopreventive agent might be responsible.

Methods. The cancer incidence studies for the Pacific Islands were completed in the 1980's. During this time period accurate records allow for a calculation of local kava consumption. This study compares the cancer incidence for a number of Pacific Island Nations with local kava consumption.

Results/Conclusions. The data indicates that the more kava consumed by a population the lower the cancer incidence for that population. The data suggests there is a close inverse relationship between cancer incidence and kava consumption.

Table 1.— Age-standardized cancer incidence rates for all sites males and females per 100,000 population

Country	Incidence male	Incidence female
Vanuatu[1] (1980-1986)	70.9	83.7
Fiji[2] (1979-1982)	75.0	112.2
Western Samoa[3] (1980-1988)	90.2	93.7
Micronesia[4] (1980-1982)	132.9	97.0
New Caledonia[5] (1977-1981)	182.0	154.0
Hawaii/Hawaiians[6] (1978-1982)	311.9*	297.6*
New Zealand/Maoris[6] (1978-1982)	322.9*	297.6*
USA, Los Angeles[6] (1978-1982)	307.2*	276.2*

* all sites but 173 (other skin)

Introduction

Cancer prevention is now a well-established medical science. Chemoprevention has been described as the intervention with specific agents to prevent, inhibit or reverse carcinogenesis before malignancy. At this time there is a concerted effort to find effective chemopreventive agents for cancer and also to subject these agents to mechanistic studies to determine their mode of action.

The South Pacific Commission Cancer Registry was established in 1977. Many South Pacific Nations have significantly lower cancer incidence than other parts of the world. Table 1 lists the age-standardized cancer incidence rates for males and females in the Pacific Island Nations with Los Angeles Caucasians as a reference.

In 1985 Henderson et al published a paper on the cancer incidence in the islands of the Pacific. He noted the high rate of smoking among Fijians and postulated the low cancer incidence might be related to chemopreventive actions of certain vitamins and trace elements found in the diet.[4] Paksoy et al studied the cancer incidence in Western Samoa and also summarized other cancer incidence studies for countries throughout the Pacific[3]. In conclusion Paksoy et al also proposed that dietary protective factors might be responsible for the low cancer rates found in some South Pacific Nations.

Correspondence to:
Gregory G. Steiner DDS, MS
PO Box 61515
Honolulu, HI 96839

In 1995 Le Marchand et al published a study on diet and lung cancer in the South Pacific.[7] This study was population-based case-controlled using data from Caucasian, Japanese Hawaiian, Filipino and Chinese groups to investigate the role of diet in explaining lung cancer incidence. He concluded much of the difference in lung cancer incidence was explained by smoking and the chemopreventive properties of lutein. He found that a very high number of Fijians smoked but they smoked fewer cigarettes. The number of cigarettes sold in Tahiti was used to confirm the data. In rural areas of the South Pacific tobacco is a cultivated crop and tobacco is commonly sold loose in local markets. It is possible the number of cigarettes consumed in Fiji is higher when local production and consumption of tobacco is calculated. However, when Le Marchand et al conducted the survey the amount of cigarettes consumed by Fijians was recorded and is assumed to be accurate. Le Marchland et al was unable to completely explain the low lung cancer incidence and proposed that the difference might be related to the chemopreventive actions of certain vitamins and trace elements in the diet.

Another possible explanation for the low cancer rates in Vanuatu, Fiji, Western Samoa, and Micronesia could be the consumption of kava.

Kava (Piper methysticum) is a plant indigenous to the Pacific Islands. All major Pacific Islands developed kava as a beverage and it is commonly consumed much like alcohol in western culture. However, western intervention has resulted in a significant reduction and sometimes the complete cessation of kava drinking in some

South Pacific Islands. Kava is traditionally prepared from the root of the plant, which is worked in water to extract the active ingredients. The active ingredients have been identified to be a group of compounds known as kavapyrones or kavalactones.

The commonly accepted actions of kava, which are referenced in the literature, are as an anti-anxiety agent[8], antidepressant[9], euphoriant[10], muscle relaxant[11], analgesic[12], and anti-convulsant[13]. Kava has become popular in the west as an anti-anxiety agent. No side effects have been identified when used on a daily basis in moderate amounts.[14]

Materials and Methods

The cancer incidence studies for the Pacific Islands were completed in the 1980's (TABLE 1). During this time period we also have the most accurate records of local kava consumption. Vanuatu recognized the potential of kava as an export crop and conducted a study in 1984 to count the plants growing in that country.[15] With the exception of Vanuatu, prior to the 1990's, all production of kava can be considered to be for local consumption. The kava production for Fiji, Western Samoa and Micronesia is primarily for local consumption at least until the early 1990's.[16] In the 1990's kava became a significant export crop for Vanuatu and Fiji.[16] During the mid 1990's there was a significant increase in plantings of kava and also sporadic harvesting of kava due to price fluctuations. For these reasons the data presented is from the 1980's in an effort to produce the most accurate figures on the amount of kava consumed in the various Pacific Island Nations..

In the 1980's Vanuatu was the primary exporter of kava. It is estimated that 20% of the production was exported outside the Pacific. The remaining 80% of Vanuatu's kava production is considered to be consumed locally. Irrespective of the figures used to calculate the kava consumption in Vanuatu, it is obvious that this country's kava consumption per person far exceeds any other country.

Reliable estimates are available for the number of plants being cultivated in Vanuatu, Fiji, Western Samoa, Tonga and Micronesia.[16] In 1984 Vanuatu counted the number of plants being cultivated, which totaled 2,605,635 plants.[15] The number of hectares of kava plants being cultivated totaled 4,200 hectares in Fiji, 800 hectares in Western Samoa, 800 hectares in Tonga and 300 hectares in Micronesia.[16] New Caledonia does not cultivate kava but imports approximately 100 tons of kava each year. Each hectare of cultivation is estimated to hold 1000 plants.[15] On average kava plants are harvested after four years and replaced.[15] The average plant when harvested yields ten kilograms of fresh rootstock.[15] When fresh rootstock is dried it retains 20% of it original weight.[15]

Kava plants on average are harvested after four years. Therefore, each year 25% of the plants are processed. Each plant produces an average of 10 kilograms of fresh rootstock, which, when dried yields 2 kilograms dried rootstock. The following formula provides us with the amount of kilograms of dried kava root consumed each year.

$$\frac{\text{Number of plants}}{4} \times \frac{\text{2 kg dry kava root}}{\text{plant}} = \text{kg consumed per year}$$

There is no information on what percentage of males and females drink kava in the countries being studied. Men will often stop at the kava bar after work and enjoy bowls of kava with friends. While women often drink kava the majority of kava consumption is by men. We have no information on what percentage of people drink kava or what percentage of men or women drink kava.. Because kava consumption is believed to vary significantly for women in each culture the cancer rate for males was used for comparison. As discussed earlier the most accurate numbers for cancer rates and kava consumption is from data gathered in the 1980's. Therefore the population figures that were used to calculate the kava consumption per person is based on figures form 1989.[17]

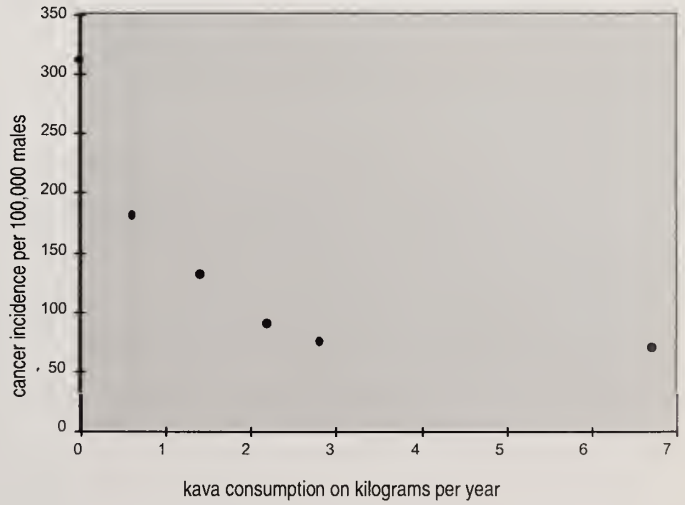
Results/Discussion

Table 2 lists the cancer incidence and kilograms of kava consumed in each country. In every country the greater the amount of kava consumption the lower the cancer incidence. The data from table 2 is displayed in chart 1. The Kingdom of Tonga is not charted due to the author's inability to determine the cancer incidence for this country. There is a close inverse relationship between cancer incidence and kava consumption.

Table 2

Country	Population 1989	Kilograms consumed	Cancer rate/ 100,000 males	Kilograms/ person
Vanuatu	155,000	1,042,252	70.9	6.7
Tonga	100,000	400,000	unknown	4.0
Fiji	749,000	2,100,000	75.0	2.8
Western Samoa	180,000	400,000	90.2	2.2
Micronesia	108,000	150,000	132.9	1.4
New Caledonia	161,000	100,000	182.0	0.6
Hawaiians	208,476	0	311.9	0.0

Chart 1.—Comparison of Cancer Incidence and Kava Consumption



cancer/100k vs. kava consumption kg/yr. R .98
cancer/100k vs. log kava consumption kg/yr. R .99

The results indicate a close correlation between kava consumption and a reduction in cancer incidence. However, if kava does reduce the incidence of cancer it is improbable that kava consumption is solely responsible for the low cancer rate. It is possible that the rate of cancer reporting has some effect due to the difficulty of documenting all cancer cases in these remote islands. It is the author's belief that kava consumption reduces the amount of tobacco consumed by smokers. If drinking kava reduces the amount of tobacco consumed less cancer would be reflected in the kava consumption data.

Age-standardized cancer incidence for kava drinking countries is one-fourth to one-third the cancer incidence found in non kava drinking countries and non kava drinking Polynesians. If kava was solely responsible for the reduced cancer incidence it would be expected that from 66% to 75% of the population drinks kava and kava has the ability to completely prevent cancer. While there is no data on the percentage of people that consumes kava it is considered to be lower than 75% of the population. It is also unrealistic to consider that kava could be 100 percent effective as a cancer chemopreventive agent.

However, other factors support the conclusion that kava does play a role in reducing cancer incidence. Men consume considerably more kava than women. Out of approximately 150 cancer incidence reporting locations in the world only approximately 10 report less cancer for men than women. The three countries with the highest kava consumption rates (Vanuatu, Fiji and Western Samoa) have a lower incidence of cancer for males than females. In countries with a lower rate of kava consumption (Micronesia and New Caledonia) a more customary relationship of cancer incidence for males and females is found.

Other than Vanuatu, there appears to be a direct correlation between kava consumption and reduced cancer incidence. The situation in Vanuatu might be explained by a number of factors. The most obvious would be that if kava has a chemopreventive effect it would be dose related. It would be understandable that after a certain amount of kava consumption no further benefit is derived. Another obvious factor is the number of people who do not drink kava. These individuals would be expected to have normal cancer rates and prevent the overall cancer incidence from dropping below a fixed level.

Another indication that kava may play a part in reducing the incidence of cancer is the normal rates of cancer found in the indigenous people in New Zealand, French Polynesia and Hawaii. In New Zealand the climate prohibits the cultivation of kava and in French Polynesia and Hawaii western influence has eradicated the kava culture. Normal cancer rates are found in the Pacific where kava consumption is not common.

The data indicates a close inverse relationship between cancer incidence and kava consumption. While the results of this study suggests kava may be an effective cancer chemoprotective agent no other conclusions can be made until further research is completed.

References

1. Paksoy, N., Montevalli, B., McCarthy S. W. Cancer occurrence in Vanuatu. *Tropical and Geographical Medicine* 1990;42:157-61.
2. Singh K., Singh K P., Seruvatu I. *Cancer occurrence in developingcountries*, IARC Scientific Publication No. 75 Lyon, International Agency for Research on Cancer 1986;315-321.
3. Paksoy N., Bouchardy C., Parkin D. Cancer incidence in Western Samoa. *Int. J. Epidemol.* 1991;20(3):634-641.
4. Henderson B.E., Kolonel L.N., Dworshy R., Kerford D., Mori E., Sing K and Thevenot H. Cancer incidence in the islands of the Pacific. *Nat. Cancer Inst. Monogr.* 1985;69:3-81.
5. Thevenot H., Germain R., Chaubet M. *Cancer occurrences in developing countries.* IARC Scientific Publication No. 75, Lyon, International Agency for Research on Cancer, 1986;323-329.
6. Muir C., Waterhouse J., Mack T., Powell J., Whelan S. *Cancer Incidence in Five Continents*, (IARC Scientific Publication No. 88), Lyon, International Agency for Research on Cancer, 1987 Vol. V.
7. Le Marchand L., Hankin J., Bach F., Kolonel L., Wilkens L., Stacewicz-Sapuntzakis M., Bowen P., Beecher G., Laudon F., Baque P., Daniel R., Seruvatu L., Henderson B. An ecological study of diet and lung cancer in the South Pacific. *Int. J. Cancer* 1995;63:18-23.
8. Volz H.P., Kieser M. Kava-kava extract WS 1490 versus placebo in anxiety disorders in a randomized placebo-controlled 25-week outpatient trial. *Pharmacopsychiatry* 1997;30:1-5.
9. Warnecke G. Psychosomatic dysfunction in the female climacteric. Clinical effectiveness and tolerance of Kava Extract WS 1490. *Fortschr Med* 1991;109(4):119-22.
10. Baum S.S., Hill R., Rommelspacher. Effect of kava extract and individual kavapyrones on neurotransmitter levels in the nucleus accumbens of rats. *Prog Neuropsychopharmacol Biol Psychiatry* 1998;22(7):1105-20.
11. Seitz U., Schule A., Gleitz J. [3H]-monoamine uptake inhibition properties of kavapyrones. *Planta Med* 1997;63:548-549.
12. Jamieson D.D., Duffield P.H. The antinociceptive actions of kava components in mice. *Clin Exp Pharmacol Physiol* 1990;17(7):495-507.
13. Kretzschmar R., Meyer H.J. Comparative studies on the anticonvulsant activity of the pyrone compounds of Piper methysticum Forst. *Arch Int Pharmacodyn* 1969;177:261-267.
14. Blumenthal M. *Complete German Commission E monograph: Therapeutic Guide to Herbal Medicines.* Boston, Massachusetts: Integrative Medicine Communications;1998:156
15. Lebot V., Merlin M., Lindstrom L. *Kava, The Pacific Elixir* Rochester, Vermont: Yale University Press; 1997:175-197
16. Lebot, V. An overview of Kava Production in the Pacific Islands: what we do know and what we don't know. *J of South Pacific Agriculture* 1997;4:55-63.
17. *Illustrated Atlas of the World*, Rand McNally and Company 1989:A12-A15.

There's New Hope About Stroke.

Today the outlook for stroke survivors is better than ever. New drugs are reducing the injury from stroke. And new rehabilitation procedures are helping people regain lost skills. But the key is still to get help fast. And to do that, you must

Know the Warning Signs

- Sudden weakness or numbness of the face, arm or leg on one side of the body.
- Sudden dimness or loss of vision, particularly in only one eye.
- Loss of speech, or trouble talking or understanding speech.
- Sudden severe headaches with no apparent cause.
- Unexplained dizziness, unsteadiness or sudden falls, especially along with any of the previous symptoms.

If you have any of the warning signs, don't wait! See a doctor right away!

American Heart Association℠

Fighting Heart Disease and Stroke

©1992, American Heart Association

Contact your local American Heart Association or call 1-800-AHA-USA1.

People know Pueblo for its...



Snazzy Web Site?
(www.pueblo.gsa.gov)



Cool Consumer
Information Catalog?



Easy-To-Remember
Phone Number?
(1-888-8 PUEBLO)



Famous Hot Salsa?

It's not just the salsa. In Pueblo, the free information is also hot. You can get it by dipping into the Consumer Information Center web site, www.pueblo.gsa.gov. Or calling toll-free 1-888-8 PUEBLO (1-888-878-3256) to order the free Catalog. Either way, you can spice up your life with ready-to-use government information on topics like investing for retirement, getting federal benefits, raising healthy children and buying surplus government property.

So remember, if you want information, mild, chunky or otherwise, Pueblo is all you need to know. Sorry, salsa not available through the Consumer Information Catalog or web site.

A public service of this publication and the Consumer Information Center of the U.S. General Services Administration.

Continued from p. 408

highest number of donors in any year since inception of the organization in 1987 and 62% higher than the previous year (16 donors).

This survey indicates that physicians in Hawaii support organ donation and are aware of some of the current practices in this area. Various demographic data involve small numbers, so it is difficult to make any definite conclusions. It is interesting to note that a lower proportion of primary care physicians are organ donors compared to specialist physicians (41% vs 71%). Perhaps we need to explore this further and redouble our efforts at working with the primary care physicians. Although Hawaii physicians are supportive of organ donation, we must continue efforts at education of both the medical/hospital staff and the public. For it is with education, that the people of Hawaii will continue to benefit from organ transplantation.

References

1. The Gallup Organization Inc/The Partnership for Organ Donation, The American Public's Attitudes Toward Organ Donation and Transplantation. February 1993.
2. Peters TG, Kittus DS, McGaw LJ, First MR, Nelson EW. Organ Donors and Nondonors—An American Dilemma. *Arch Intern Med.* 1996;156:2419-2424.
3. Molzahn AE. Knowledge and attitudes of critical care nurses regarding organ donation. *Can J Cardiovasc Nurs.* 1997;8:13-18.
4. Genier CE, Joseph AS. Louisiana neurosurgeons and the organ procurement shortage: a comparative analysis of perceptions, attitudes, and ethical values. *J La State Med Soc.* 1995;147:465-471.
5. Weber F, Canbay AE. Attitudes of physicians and nursing staff members toward organ donation in an urban area of Germany. *Transpl Proc.* 1999;31:2179-2180.
6. Evanisko MJ, Beasley CL, Brigham LE, Capossela C, Cosgrove GR, Light J, Mellor S, Poretsky A, McNamara P. Readiness of critical care physicians and nurses to handle requests for organ donation. *Am J Crit Care.* 1998;7:4-12.
7. Department of Health and Human Services. Organ Procurement and Transplantation Network; Final Rule. Federal Register. April 2, 1998. 42CFR Part 121; 16296-16338.
8. US Department of Health and Human Services. 1999 Report to Congress on The Scientific and Clinical Status of Organ Transplantation. September 1999

Continued from p. 418

References

1. HEDIS (Health Plan Employer Data and Information Set) is a set of standardized performance measures designed by the National Committee for Quality Assurance (NCQA) to reliably compare the performance of managed health care plans.
2. The Med-QUEST Division (MQD) of the Hawaii State Department of Human Services (DHS) administers Hawaii's Medicaid Program, a joint partnership, State and Federal medical assistance program for needy individuals and families, as authorized under Title XIX of the Social Security Act.
3. The Hawaii State fiscal year covers the period from July 1, 1997 to June 30, 1998.
4. National Committee for Quality Assurance. *HEDIS 3.0/1998 Volume 1 and Volume 2.* Washington, DC: National Committee for Quality Assurance; 1997.
5. 1998 QUEST HEDIS Report for Medical Plans. Honolulu: Hawaii Department of Human Services, Med-QUEST Division; 1999.
6. Honbo L, Loke M. An assessment of Hawaii QUEST medical plans performance using Medicaid HEDIS measures, 1996-1997. *Hawaii Medical Journal*, 1998; 57 (10): 662-673.
7. Hawaii Department of Business, Economic Development and Tourism: Research and Economic Analysis Division, Statistics and Data Support Branch, *The State of Hawaii Data Book: A Statistical Abstract; 1997.*
8. *The State of Managed Care Quality, 1998.* Washington, DC: National Committee for Quality Assurance; 1999.
9. *Benchmarks on Selected Medicaid HEDIS Measures*, Unpublished Report. Washington, DC: American Public Human Services Association; 1999.
10. *Health Plan Hawaii HEDIS 3.0/1998.* Honolulu: HMSA Health Plan Hawaii; 1998.
11. *1998 Quality Report.* Honolulu: Kaiser Permanente Hawaii; 1998.
12. U.S. Department of Health and Human Services, Public Health Service. *Healthy People 2000: National Health Promotion and Disease Prevention Objectives.* Washington, DC: Government Printing Office, DHHS 91-50212; 1990.
13. HMSA Foundation, *Health Trends in Hawaii-A Profile of the Health Care System, Fourth Edition*; 1999.
14. This estimate applies to TANF and GA categories only.

WE COLLECT PAST DUE ACCOUNTS

Only 25%* fee for Health Care Firms!

Why give up more!

Wood & Tait

HI Collection & Detective Agency
Staff on Kauai, Oahu, Maui, & Hawaii
http://www.woodtait.com

739-0433

jwood@woodtait.com

*Applies to accounts assigned during this promotion; no restrictions as to dollar size or age of accounts. Fee will increase to 50% if litigation or forwarding required; you will receive a contract.

Aloha Laboratories, Inc.

...When results count

CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

David M. Amberger, M.D.
Laboratory Director

Phone:(808) 842-6600
Fax: (808) 848-0663
E-mail: results@alohalabs.com
http://www.alohalabs.com

Space JAM?

Lots of important files? No more room? Don't let a few dollars keep you frustrated.

SAFE AND CLEAN ENVIRONMENT TO STORE ALL YOUR DOCUMENTS!
"EZ" hours - Open 7 Days a week!
(One of the best in town - truly an EZ Access.)

FREE! FIRST MONTH* Any Size Locker

*Some restrictions may apply

BBB MEMBER HAWAII

Call Now For FREE TRUCK & DRIVER!

EZ-ACCESS STORAGE SYSTEMS

HAWAII'S LEADING SELF STORAGE FOR OVER 20 YEARS!

CENTRAL AREA (near Ward Ave.) Close to Waikiki, Ala Moana & Downtown. 592-0220

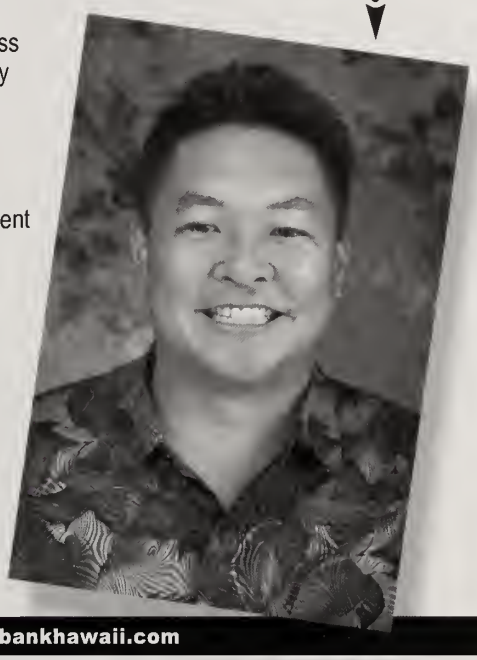
NORTH KING AREA (in Kalihi) Close to Freeway, Kam Heights & Salt Lake. 832-0450

Meet Mark.
He's got the prescription for a healthy business.

Mark Morita is a specialist in Hawaii's medical/health industry. As your business banking officer, he'll keep your company in sound financial condition through products and services like:

- Premier Business Creditline
- ¿CityBanker internet cash management
- Attractive lease options

To find out more, give Mark a call today at 546-3908.



CITYBANK

MEMBER: FDIC

www.citybankhawaii.com

YOU'VE WAITED YOUR
WHOLE LIFE
DON'T WAIT
ANY LONGER

SAVE THOUSANDS OF DOLLARS BY SELECTING YOUR STEINWAY BEFORE THE DECEMBER FACTORY PRICE INCREASE

You've always dreamed of the day when the incomparable sound of a Steinway would fill your home. And now your moment has arrived.

Before the Factory Price Increase, you can save thousands of dollars on the entire line of hand-made Steinway pianos. We urge you to visit us before this rare opportunity passes you by.

Steinway Pre-Factory Price Increase Savings Opportunity...

Act Now And Save Thousands Selecting A New Steinway or Boston Piano.



SANDERS PIANO

946-6500
1500 S.KING STREET

Classified Notices

To place a classified notice:

HMA members.–Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.

Nonmembers.–Please call 536-7702 for a non-member form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Physician Wanted

PACE Hawaii at Maluhia.– A comprehensive and innovative approach in caring for Hawaii's elderly, is seeking one full-time and one part-time physician to join its dynamic team. BC/BE in geriatric or internal medicine. Position to be filled immediately. Send C.V. or call: PACE Director, 1027 Hala Drive, Honolulu, HI 96817, (808) 832-6114.

BIG ISLAND OF HAWAII– Multi-specialty group practice seeking BC/BE OB/Gyn to service community of 35,000+; in breathtaking upcountry setting. Waimea is 15-20 minutes from beautiful uncrowded beaches and world class golf courses. Various start-up options available with partnership potential. Contact Linda (808) 885-9606 or fax (808) 885-9506. Aloha!

Locum Tenens

NEED A LOCUM?– Board FP with Hawaii License. Summer work. 2-4 weeks. (805) 687-1706 - leave message. (805) 893-5424 - fax. Happy Vacation.

GET IN THE SWIM



PHOTO PARADE / EDDIE ADAMS

MDA
summer camps for
kids are fun and free!

MDA
Muscular Dystrophy Association
1-800-572-1717 • www.mdausa.org

The Weathervane Russell T. Stodd MD

Evil Can Never Be Eradicated, But It Is Necessary To Keep Struggling.

The July issue of Ophthalmology carried an interesting but painful summary of the ocular and nervous system injuries associated with shaken baby syndrome. Cases were evaluated for clinical findings, autopsy findings and outcome of survivors. A retrospective analysis of 123 child admissions over an eleven year period showed that visual response and pupillary reaction on initial examination showed a high correlation with survival. A good visual reaction was related to a promising neurologic outcome and good visual recovery. Devastating injuries can occur to vision, but the visual loss is most often the result of brain damage and not due to the presence of retinal bleeding. Retinal hemorrhages were noted in 83% of the patients, and 85% of those were bilateral. The finding of retinal hemorrhages is highly suggestive of abuse, but a limiting factor may be that in 30% of the patients, non-ophthalmologists failed to detect them.

Just A Simple Little Problem Of Medical Research, Religion, Ethics, Disease, Law And Politics.

In Great Britain a government panel has recommended that restrictions on medical research using stem cells from cloned human embryos should be eased. Currently, the stem cells of greatest interest to researchers are obtained from aborted fetuses, or from human embryos created for in-vitro fertilization but donated to research by parents. The intent is to develop treatments for major diseases such as diabetes and Parkinson's disease. Some religious and other groups oppose using such tissue. The executive director of *Oregon Right to Life* said, "This is a tragedy for human kind, because we are now going to be doing harmful, destructive deadly experiments using human embryos." However, the director of *Progress Education Trust*, a London based medical charity stated, "The potential benefits to society are so huge that it would be unethical not to at least consider such research."

Matter Can Neither Be Created Or Destroyed, However It Can Be Lost.

There aren't many corporate raiders in the health care industry, but raiders are ever on the alert for cash flow and Visx has that with about $50 million of cash annually. Carl Icahn, a financier with a history of raiding airlines, has locked onto the laser eye surgery company. He disclosed his intent to buy more than $15 million of Visx stock. In a defensive maneuver, the company's six member board unanimously adopted a poison-pill with a share-holder-rights plan. Visx stock traded as high as $103 a share a year ago, but now hovers around $22. The company has been battered by competition from Bausch & Lomb Inc., and Alcon Laboratories Inc. which bought Summit Technology, and Japanese owned Nidek. Meantime the promotional frenzy of ads and promises continues unabated.

We're Making Progress. Things Are Getting Worse At A Slower Rate.

There is bad news and a little good news on the malpractice scene. The bad news is that the median award for malpractice soared in 1998, increasing from the previous year by 46% from $515,738 to $755,530. Also, the median cost of settlement jumped by 24% to $497,412. The good news is that the overall number of favorable verdicts for plaintiffs decreased with surgical negligence dropping from 38 to 32%, but childbirth negligence increased from 35 to 46%. For the malpractice carriers there is a fate worse than death. The top five outcomes most likely to result in a plaintiff verdict in 1998 were brain injury (median cost $4,089,914), paralysis ($3,000,000), cancer($766,500), spinal nerve injury ($700,000) and death ($678,478).

Men Are Not Arrested For Stealing, They Are Arrested For Being Caught.

The internet has many wondrous capabilities, but one of them is not information protection. Three years ago, an imaginative entrepreneur named Timothy Pickering set up a free website designed to reveal the mysteries of health-care costs. Want to know the doctors fee for appendectomy? $601; for T & A $248. Simply punch up Myhealthscore.com and click on "hip" and the cost estimate is $12,000. Using the CPT (Current Procedural Terminology) as a data base, Mr. Pickering hoped to generate some income by offering doctors the opportunity to be listed on the site. The American Medical Association was not happy with Mr. Pickering. It ordered him to shut down or pay hefty royalties, or else be prepared to go to court. He surrendered. "I can't afford to fight the AMA." The AMA first published the CPT in 1966 when it was one of several competing coding systems, but through the years it has eclipsed its rivals and now has more than 7,000 five digit codes for procedures. The AMA's complaint is weakened because it isn't trying to stop the use of the CPT, and encourages widespread use, but it must be on AMA terms. That means protecting the copyright, which is very hard to do since it has even given away use at times, and the internet is like a huge book on everybody's library shelf. Meanwhile, back on Capitol hill, a bill that would expand legal protection of large databases is pending, supported by Realtors, legal-information providers, the AMA, and many newspaper publishers.

If At First You Don't Recede, Diet, Diet Again.

A study by the National Institute on Aging evaluated midlife eating habits to brain function. Surprisingly, they were able to relate habitual consumption of tofu to brain atrophy. Extensive case studies were done involving testing brains of people which had been tracked during the 1960s and 70s for various other purposes related to dietary habits. The Institute found that fans of bean curd scored lower on cognitive tests and had lower brain weight than people who eschewed tofu. No attempts were made to associate vegetarians with use of more air freshener.

I'm For Helping The Elderly. I Might Be Old Myself One Day.

Australia has a drug insurance program that makes sense. Economists estimate that the program costs about 1/3 less than other developed countries. Medications are evaluated for economic benefits against the cost. When a drug is approved by the Aussie FDA, a committee evaluates it compared to alternative medicine already subsidized. The manufacturer puts a price on the product which the committee can dispute if it feels the cost outweighs the benefit to the community. If a drug is approved, the government subsidy applies, but if not the patient must pay the full price. Obviously, the program has global drug makers on edge, because other nations may use Australia as a model. *Viagra* was not approved, partly based upon comparison with an approved injectable compound, but more because it was felt physicians would prescribe it for recreational use, and expenditures would balloon. In effect, the cost to taxpayers would outweigh the benefit to those who have a medical need for it. This could prove hard on Pfizer.

The Best Way To Double Your Money Is To Fold It In Half And Put It Back In Your Pocket.

The state of Oregon has a government run lottery which is supposed to generate income for economic development, but has frequently been used to fund education. Recently, the lottery has not been producing the money expected, and the explanation is that people are spending their gambling bucks in the casinos attached to the Indian reservations. To lure dreamers back to the numbers game, the state is spending well over a million taxpayer dollars to advertise the lottery. Granted that my perspective is a bit old-fashioned, but is there something inherently weird about the state using tax dollars to encourage absurd gambling to fatten the state coffers? Did the cash for the ads come out of the education budget?

ADDENDA

❖ The first known contraceptive was crocodile dung, used by Egyptians in 2000 B.C.

❖ According to the American Bar Association, nearly 700,000 people were arrested for marijuana violations in 1998 – more than all arrests for murder, rape, robbery and aggravated assault combined.

❖ Al Gore on attacking Bush- "A zebra cannot change its spots."

❖ British politician's metaphor for the millennium - "All along the untrodden paths of the future, I can see the footprints of an unseen hand."

❖ Preparation "I" - a compound used to shrink inflated egos.

❖ Hotel sign in Acapulco - "The manager has personally passed all the water served here."

Aloha and keep the faith —rts■

Contents of this column do not necessarily reflect the opinion or position of the Hawaii Ophthalmological Society. Editorial comment is strictly that of the writer.

One of a kind.



Unmistakable.

At MIEC, we know what it means to stand out in the crowd. Twenty-five years ago, we started the West's first doctor-owned, not-for-profit malpractice insurance company. The idea quickly caught on, and now there are dozens of "doctor-owned" companies throughout the country.

But there is only one MIEC. Our rate and dividend history is unparalleled. Guess that's why we don't need a large sales or marketing staff. Our track record speaks for itself.

The original is still the best. Call us.

Medical Insurance Exchange of California
6250 Claremont Avenue, Oakland, California 94618
Telephone 800-227-4527 www.miec.com
HAWAII CLAIMS OFFICE: 1360 South Beretania Street, Honolulu, Hawaii 96814

Our 25th Anniversary, 1975–2000

Sponsored by Hawaii Medical Association


1% ONCE A DAY
Noritate™
(metronidazole cream) Cream, 1%
PSORCON® e
(diflorasone diacetate cream) 0.05%
(diflorasone diacetate ointment) 0.05%
BENZAMYCIN® Topical Gel
(3% erythromycin, 5% benzoyl peroxide)
Klaron
(sodium sulfacetamide lotion) 10%
DERMIK
Innovation that makes a world of difference
Our Mission: To become a global leader in providing innovative dermatological products to patients and healthcar
To learn more, call 1.610.454.8110, or vi
the World Wide Web at http://www.derm
Platinum Benefactor
Honor Society
Dermik Laboratories supports research in skin care through a grant to the Dermatology Foundation
Hawaii medical journal
v. 59
no. 11
November 2000
Received on: 12-13-00
Brown University Library
SCI
LABORATORIES, INC.
Dedicated to Dermatology™
A RHÔNE-POULENC RORER COMPANY

HAWAII MEDICAL JOURNAL

December 2000 Volume 59, No. 12 ISSN: 0017-8594



MIXED ADC 967
Serials Dept
Sciences Library
Box I
Brown University
Providence, RI 02912-0001

HAWAII MEDICAL ASSOCIATION 1856

Stability.

For more than 60 years, HMSA's sound management philosophy has meant financial protection for HMSA's members and physicians. We were Hawaii's first health plan and we remain the No. 1 choice of providers and consumers statewide.

If you're looking for stability,
HMSA is here—right where we've always been.

HMSA. Now that's a health plan.

HMSA
Blue Cross
Blue Shield
of Hawaii

An Independent Licensee of the Blue Cross and Blue Shield Association

Choices for a Healthier Hawaii

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
Vincent S. Aoki MD, Benjamin W. Berg MD, John Breinich MLS, Satoru Izutsu PhD, James Lumeng MD, Douglas G. Massey MD, Myron E. Shirasu MD, Frank L. Tabrah MD, Alfred D. Morris MD

Journal Staff
Editorial Assistant: Drake Chinen

Officers
President: Philip Hellreich MD
President-Elect: Gerald McKenna MD
Secretary: Calvin Wong MD
Treasurer: Paul DeMare MD
Past President: James Lumeng MD

County Presidents
Hawaii: David Camacho MD
Honolulu: Walter K.W. Young MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Patrick Aiu MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 2000 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 432

Poems
Robert S. Flowers MD 437

Medical School Hotline
Carl-Wilhelm Vogel MD, PhD 438

End-of-Life Preferences in Hawaii
Kathryn L. Braun DrPH, Alvin T. Onaka PhD, and Brian Y. Horiuchi MPH 440

Differing Attitudes Between Psychiatrist and Primary Care Providers at the Interface
Michael J. McGrath MD 447

Index 2000
Hawaii Medical Library 451

Classified Notices 457

Weathervane
Russell T. Stodd MD 458



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

Bishop Planetarium

The planetarium will soon be replaced by a new structure including new technologies.

Editorials

Norman Goldstein MD
Editor, Hawaii Medical Journal

Hawaii Medical Journal Joins the Web

Tables of contents for Hawaii Medical Journal were recently made accessible via the internet, thanks to efforts of the Mamiya Medical Heritage Center staff. Listings for issues from volume one (1941) through volume 20 (1961) are archived on the site, as are issues from 1999 and 2000. Mamiya Medical Heritage Center staff is currently working to put tables of contents from 1961 through 1998 in HTML format, and will post them as they are completed.

Users can browse the tables of contents by issue, and the site also offers a search function. For contributions to the Journal, an **Author Instruction** link is available, as well as **Contact Information**.

To access the Journal, click the **Mamiya Medical Heritage Center** link on the HML homepage (http://hml.org), then click **Hawaii Medical Journal**.

Mahalo to John Breinich, Executive Director of the Library, and the staff of the Mamiya Medical Heritage Center for getting the Journal on the Web.

This Month's Manuscripts

This month, we end manuscripts for the year 2000 with "End-of-Life Preferences in Hawaii" and "Differing Attitudes between Psychiatrists and Primary Care Providers at the Interface."

The name of Kathryn Braun should be familiar to readers of the Journal. She first reported on Cultural Issues in Death and Dying in 1996, and in 1998 compared five ethnic groups in her manuscript "Do Hawaii Residents Support Physician-Assisted Death?" Kathryn was also a very active member of Ah Quon McElrath's ad hoc committee on Living and Dying in Hawaii.

In this manuscript, based on telephone interviews with more than 2,000 individuals, she and her associates found that Hawaii residents are very similar to mainland residents, especially in their preferences for dying at home, seeking hospice care, and support for legalization of aid-in-dying. Kathryn and associates emphasize, "As public attention and consumer awareness about end-of-life issues increase, it is imperative that healthcare systems must encourage physicians and patients to discuss options and preferences."

The second manuscript in December's Journal was suggested by several physicians. Two additional references were recommended. The first is "Difficulties in Integration of Psychological and Medical Practices" by Herbert N. Brown MD and Norman E. Zinberg MD.[1] In a follow-up Letter to the Editor, these authors suggest that "medical teachers must be aware of and convey to their students the limits of individual capacity."[2]

References

1. Brown NB, Zinberg NE: Difficulties in the Integration of Psychological and Medical Practices. *Am J Psychiatry* 1982; 139, 12:1576-1580
2. Brown NB, Zinberg NE: Further Comments on the Role of Psychiatry. Letters to the Editor, *Am J Psychiatry* 1983; 140, 1:136

Aloha, Becky Kendro

Becky Kendro has been affiliated with the Hawaii Medical Association since 1967 when politicians knew her as the Director of Government and Legislative Affairs. Working with the HMA's Legislative Committee of Physicians, Becky represented us at meetings and hearings.

She helped to develop the Hawaii Relative Value Studies, a coding system which was the predecessor of the CPT and other systems currently used today. Becky coordinated the programs of Continuing Medical Education in conjunction with the Regional Medical Program in 1968 when there was no School of Medicine, and when physicians had to rely on visiting professors for their continuing education. She was the HMA liaison with many agencies including MADD, The Medicine Bank, Community Health Centers, and Coders.

Becky's official title was Assistant Executive Director, Community Affairs, but she has worn many hats. As Managing Editor of the HMJ, income and size have doubled during the past five years.

Becky has recently taken "early retirement" for the Hawaii Medical Association. I'm not really sure what that means, but knowing Becky, we're certain that she'll not be sitting around the rocking chair.

Becky, your extended HMA family wishes you all the best with a heartfelt "mahalo nui loa".

Healing thyself: Medical professionals who face up to addictions

By Beverly Creamer
Advertiser Staff Writer

It's 7 p.m. on a weekday evening as Dr. S. Larry Schlesinger closes the door of a Wailuku, Maui, office and begins an unusual meeting with the physicians gathered inside. They're not discussing patients or procedures. These doctors are discussing themselves, and why they have abused alcohol or drugs.

It's part of Larry Schlesinger's own recovery, and part of his commitment to other doctors who suffer from the same secret disease he had.

"There was no organized way of helping physicians at the time, so I signed myself into treatment," he says of the day in 1983 when he acknowledged his addiction to tranquilizers and alcohol. "Now I work in a lot of ways to help impaired professionals so they don't have to flounder as I did at the beginning."

When Schlesinger was honored as Physician of the Year by the Hawaii Medical Association two weeks ago, his introduction was unusual:

"Tonight's honoree," intoned Dr. Russell Stodd, a Maui ophthalmologist and the senior physician on that island, "is a drug addict.

"But he confronted his demons and overcame his addiction and kept his life and his medical license intact."

A startled audience applauded as Schlesinger stood up. Since he began his recovery from addictions to prescription tranquilizers and alcohol 17 years ago, the well-known plastic surgeon has worked ceaselessly to help other professionals dig their way out of the same hell-hole.

"It's important to let other people know recovery is possible," said Schlesinger, who checked himself into a California hospital in 1983.

"That's why this award feels so good. It's unfortunate that you have a disease, but if you have it, you treat it and go on with your life.

"The fact of the matter is, you're only as sick as your secrets."

In the medical world, Schlesinger is known for his expertise in cosmetic and plastic surgery. But behind the scenes, he has spent the past decade and a half quietly staging daring rescue missions as part of the Committee for Physicians Health under the Hawaii Medical Association.

"Many doctors in the community don't even know this committee has been functioning," said Stodd.

"Medicine is no longer an army that kills its own wounded," says Schlesinger. "But that was not always true. Twenty or 30 years ago, if a doctor had an alcohol or drug problem, he would be drummed out of organized medicine as someone not fit to be a physician. Organized medicine should be congratulated for understanding it's a disease not all that different from diabetes."

Complaints

The committee works delicately, investigating complaints from concerned patients and co-workers and even pharmacists who notice prescription irregularities. Once armed with concrete evidence, the team moves into action.

"What you do is trick the doctor into coming to your office for a 'patient consultation,' " said Stodd. Then, together with the physician's family, colleagues and those who have documented the substance abuse, an intervention takes place to force the doctor into treatment.

" 'We know what you're doing,' " the doctor is told. " 'Here's a plane ticket. We're trying to save your life and your license.' "

In the face of harsh reality, initial hostility usually collapses. "We're holding the doctor hostage," said Stodd. "The doctor is confronted with: 'Look, you will do this, or we will report you to the Board of Medical Examiners, and they will suspend your license.' "

From Schlesinger's vantage point, the denial inherent in addiction makes it crucial to use coercion, not persuasion, to force a doctor to confront the problem.

Most cooperate

Ninety-five percent agree to go into treatment. "Early on, they hate your guts," said Schlesinger. "Down the road, they're grateful."

When Schlesinger faced the same demons himself, few people were looking. His ex-wife never said a word, though he was polishing off half a gallon of Gallo a night and injecting a tranquilizer in the morning to curb a nameless anxiety.

"I was treating what I thought was a medical problem," he says, "and trying to treat it with the least addictive thing I could find. It just got out of hand."

Eventually an alert nurse reported him to the hospital and then pushed him into a meeting of Alcoholics Anonymous. It was the moment that made the difference.

"It was May 6, 1983, the last day I ever drank any alcohol or took any mood-altering substance. It was recognizing I wasn't alone in the world."

Addiction treatable

At the center of all of this, said Schlesinger, is the belief that addiction is a treatable disease, not a moral issue. "These are sick people who need to get well," he says, "and not bad people who need to get good."

For Schlesinger, the commitment to intervening on behalf of addicted physicians is part of working the 12-step program that continues to be a daily stabilizing force in his life. It's also why he walked into a Salvation Army office on Maui in 1991 and asked if there was some way he could be of assistance.

"I talked to a Captain Begonia, and he said 'What do you do?' " Schlesinger remembers. "I said 'liposuction and face-lifts,' and he said 'Well, we don't really need that, but we desperately need a clinic for the homeless.' "

" 'You got it,' " replied Schlesinger, who then mobilized a force of two dozen physicians to treat needy people on a volunteer schedule. A year later, with grants in place, the clinic hired staff.

Program intense

It's also the reason Schlesinger got involved with helping found a Maui Drug Court patterned after the one on Oahu, and the original one in Dade County, Fla., begun by Janet Reno.

"We're taking first-time, nonviolent drug offenders and, instead of sending them to prison with no treatment, we recognize addiction is a disease and needs treatment, not punishment," said Schlesinger.

"We put them into a very intensive treatment program for 18-24 months. Many of these people are illiterate, have never held a job and have no job skills. So if you educate them along with treating their disease, you have a great chance of having little or no recidivism."

Schlesinger rises at 4:30 a.m. daily and puts in a sweaty hour-and-a-half workout in the gym of his Kihei home before heading out on a day that can last 15 hours. With offices on three islands, he's on five interisland flights a week, traveling to see patients, and rarely in one place for long. Though he and his second wife, Straub psychologist Laura Schlesinger (not the radio personality), keep homes on both Maui and Oahu, one is barely more than a pit stop for changing clothes and getting a good night's sleep.

Since his own recovery, Schlesinger has become a leading addictions specialist, training others and leading more than 100 interventions himself, 25 of them with physicians. The others involved ministers, judges and other professionals. "I'm called in lots of times because word gets out I'm available," he said.

Initial denial

According to Becky Kendro, former assistant executive director of the Hawaii Medical Association, about 40 medical personnel have

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA

undergone interventions since 1985, and that number includes dentists, medical students and other medical personnel.

"Initially you see denial, but then acceptance," said Kendro. "Eventually, they are so grateful."

While the committee makes arrangements for treatment in a Mainland facility, the physician pays for it. "After he's been in treatment and his brain begins to detoxify," said Stodd, "he'll recognize 'I really do have to be here.' "

After treatment is completed, the committee monitors the physician for five years.

But physician health committees based in hospitals may deal with more than addiction. Psychiatric disorders, neurological problems, even something hospitals call "disruptive" behavior can fall under their purview.

"There's a kind of arrogance that goes along with being a physician, and it can make them difficult to deal with at times," said Dr. Gerald McKenna, a Kauai psychiatrist and addictions specialist who chairs the HMA Committee for Physicians Health and is medical director at Ke Ala Pono, a private addiction treatment program on Kauai.

"Hospitals know which are disruptive physicians, and we're trying to get to doctors before they're fired," said McKenna, who will help host a conference next weekend at Wilcox Memorial Hospital to encourage all Hawai'i hospitals to establish physician health committees.

The stresses of medicine and the loners it attracts both play a role in the problem. "What we're trying to do is get physicians to take better care of themselves," said McKenna.

"Doctors are like most executives. They're workaholics and get lost in their jobs, and that's not healthy for anyone. But they also tend to be lone rangers and often very isolated. To get them into a group is like herding cats. Plus, they don't think they ever ought to get sick."

Weekly AA meetings

In his own recovery, Schlesinger has never looked back.

"It's no longer hanging on by your fingernails. You get past that," he says. "You go to the meetings to show other people recovery is possible. At the same time, it's important to remind yourself how bad it was, which is easy to forget when you're doing well.

"Had I not succumbed to this disease I would never have discovered God, humility, and I never would have been any bit the person I am today," he says. "I would have limped along with whatever I gained from my childhood, because most adults don't work on getting better every day. Now I go to AA meetings every week with people working at becoming better people, and that's thrilling."

Editor's note:
This article appeared in the Sunday Honolulu Advertiser, November 5, 2000.

Just in case you missed it, we have reprinted it with permission of the Honolulu Advertiser and staff writer Beverly Creamer.

Beverly Creamer has been covering medical subjects for the Honolulu Advertiser for the last nine years. In that time she has been honored several times by the Hawaii Medical Association with its annual print media award. Born in Canada, she came to Hawaii to attend the University of Hawaii, where she graduated with a degree in Journalism.

Highlights of the HMA Scientific Session

Russell T. Stodd MD
Contributing Editor, Hawaii Medical Journal

The 144th Annual Meeting of the Hawaii Medical Association was highlighted by an outstanding medical education program. The HMA and staff can be proud of the quality, breadth and diversity of material. The facility was large and comfortable, the audio and visual systems performed well. The education committee prepared a variegated quilt of medical issues including osteoporosis, obesity, cancer, genetic testing controversies, mental health and quality of life issues for the dying patient. The following capsules are meant to provide a brief summary of the many excellent presentations, and to emphasize the educational experience for those who attended.

ENDOCRINE UPDATE and **WEIGHING IN ON OBESITY.** The Friday program was moderated by David Fitz-Patrick, M.D., and began with **Michael R. McClung, M.D.,** Director of the Oregon Osteoporosis Center at Providence Hospital in Portland. The presentation accented new diagnostic measures which permit more accurate diagnosis of vulnerable patients, and included a comprehensive handout. An attractive and enlarging menu of effective therapeutic choices are available to prevent bone loss and cut down on fractures in risky patients. Also, patients must be instructed in maintaining appropriate life style with a safe environment and avoidance of tobacco and excess alcohol.

James R. Gavin III, M.D., Ph.D., internist and endocrinologist at Howard Hughes Medical Institute, gave a well illustrated and comprehensive look at diabetes. Showing the genetic backgrounds for both type one and type two diabetes, Dr. Gavin helped make the clinician understand how insulin works and when oral medication is not effective for maintenance of sugar control.

Bruce D. Weintraub, M.D., Professor of Medicine at University of Maryland School of Medicine, presented an update on thyroid disease and therapy with emphasis on cancer. Ethnicity is a factor, as thyroid cancer occurs more frequently in Philippine women, and is especially aggressive over age 50. The condition is three times as common in women as men. Therapy centers around surgery, radioiodine and suppressive hormone use. Gene therapy in vitro experiments show ability to kill cancer cells, and may lead to new avenues for therapy.

Robert H. Eckel, M.D., Professor of Medicine and of Physiology and Biophysics, University of Colorado Health Services Center, featured a very good discussion of obesity and what options work and what do not. With the simple equation, energy intake and energy expenditure, he showed why diets work, but later encourage appetite to rise and physical activity to go down. Slow gradual weight reduction is important. Goals must be realistic such as 10% of body weight in six months, then weight maintenance and possibly followed by further slow weight loss. He outlined the benefits: drop in blood pressure, improved cardiac function, dyslipidemia, and glucose tolerance. This was an excellent program, well organized and nicely illustrated.

CONTROVERSIES IN CANCER DIAGNOSIS AND TREATMENT –

The second day was hosted by Reginald Ho, M.D., and began with an excellent presentation of developments in prostate cancer management by **Walter Strode, M.D.,** Chairman, Department of Urology, Straub Clinic and Hospital. Dr. Strode outlined age specificity for PSA tests, and relationship to probability of cancer. Digital rectal exam (DRE) is considered less important than needle biopsy. The combined modality staging of PSA, DRE and biopsy report of tumor differentiation will give a fairly accurate predictability of the disease. Controversies arise in screening, evaluation, and treatment options. Debates also center around watchful waiting, irradiation, or radical prostatectomy in relation to staging. This was a well organized and very interesting program.

Laura Weldon Hoque, M.D., Medical Director, Kapiolani Breast Center, gave a careful and comprehensive outline of tumor frequency, and the surgical and medical management of early breast cancer. Question of lumpectomy versus mastectomy was presented relative to risk of recurrence, risk of radiation, and cosmesis. Sentinel lymph node biopsy will indicate if there is a need for axillary lymph node dissection, and the surgical technique was described. A detailed analysis was offered of endocrine therapy, radiation therapy, benefit (or not) of Tamoxifen. Other factors for consideration are family history, patient age, desire for pregnancy, and tumors not seen on mammography. In summary, breast cancer is a common disease and a variety of treatments exist, all with similar outcomes. Patients often turn to the primary medical doctor for assistance in arriving at a decision during this difficult time. They need someone they know and trust to help with making decisions.

Kenneth Sumida, M.D., Assistant Professor of Medicine, JABSOM, University of Hawaii, gave an interesting and broad presentation about cancer screening controversies. He noted that attention must be directed to validation of tests, improving outcomes, using less radical treatment and saving resources. He discussed difficulties in managing breast cancer— false negatives, patient age, physician bias, and unnecessary morbidity. Dr. Sumida also discussed colorectal cancer and the multiple risk factors - family history, polyposis, age. He noted that fecal occult blood test and sigmoidoscopy over age 50 will reduce mortality, but that DRE will not. Cervical cancer frequency is declining due to pap smears, but vaginal smears are not beneficial. Risk factors of age, sexual activity, multiple partners were noted. A few remarks were included regarding prostate cancer, echoing what had been presented by Dr. Strode. Good coverage of a large area.

Ted Hsia, M.D., Emeritus Professor of Genetics and Pediatrics, JABSOM, University of Hawaii, discussed controversies in genetic testing. He noted that genetic testing is already with us, and is an exciting area of research. Because all malignancies arise from abnormally altered genes, this is an extraordinary and potentially very important area. However, several areas of controversy exist. Many tumors are not associated with known mutations, so DNA tests do not help. Research centers are frequently the only place available for tests, and the accuracy and consistency of DNA tests depend upon the technical competence of those doing the test. For obscure tests, the cost may be excessive. The oncologist has to understand which are the most relevant and useful tests for the patient, and know the meaning of the tests. Liability issues are important as the physician may be held responsible for failing to obtain a test, misinterpreting the test, or misleading the patient, even if a correct explanation is not understood. His talk included a discussion of the bio-genetic aspects of tests. This is an exciting era for major advances in clinical science, especially in genetics, and while test practicality is limited at this time, it will expand. Eventually, gene therapy may become possible.

Robin L. Seto, M.D., internal medicine and former Medical Director, Kona Hospice, centered her talk around caring for patients from time of diagnosis until death, especially pain and symptom management, quality of life, cultural and socio-economic factors and functional assessment. Her presentation dealt with a comprehensive analysis and individual evaluation of patients with terminal illness. Only 23% of patients die with cancer. With progressive age, a wide range of clinical disorders demand that different specialities must agree on basic principles in end-of-life care. Patients must be respected and managed individually. They need access to palliative and hospice care, and must be afforded the right to refuse treatment. This was a very thorough and well presented paper with excellent handouts.

MENTAL HEALTH IN HAWAII 2000 -

The final day session was chaired by **Stephen B. Kemble, M.D.,** Assistant Professor, JABSOM, University of Hawaii, who also presented the first paper of the day describing outpatient mental health care and managed care in Hawaii. According to national statistics, the prevalence of mental health and substance abuse problems in the general population is 28%. Only 1/2 of these receive treatment and much is provided by non-specialized providers of care. About 6% of the adult population received care over the course of a year. Medicaid rates in Hawaii are about 2/3 of true rates, which is better than most states. 24 visits are allowed per year, and hours can be split to allow for increased visits when necessary. This allows for shorter treatment plans and are easier to schedule. Hawaii law protects providers from managed care abuses. In 1997 nurses and social workers were added for reimbursement. Kaiser and Straub contracts have increased managed care penetration, making the financial viability of private practice difficult. Necessary changes are needed for full parity, need to refine managed care and reduce authorization policies.

Kenneth Luke, M.D., Psychiatry, Medical Director, Crises Response Team, Honolulu, outlined problems of mental health care of the poor and homeless. Many of the patients are difficult, with diagnosis of depression, schizophrenia, and cognitive deficits. The state was been found wanting in caring for these patients and was ordered by the Department of Justice to provide adequate services. About 3/4 of patients were ordered into care by the court for criminal activities, and the community has moved toward more comprehensive care. Community Mental Health Centers serve as the backbone of the system, seeking to reduce the number of homeless mentally ill. The crisis response mobile outreach team reacts to provide shelter beds and stabilization of patients. Partial hospitalization is

a transient remedy to provide in-between care as an alternative to inpatient care. Psycho-social rehabilitation provides for three levels - inpatient treatment, community health center, and last clubhouse programs where consumers help each other. With the assertive community treatment approach, through jail diversion and community treatment team, and the adult mental health assessment team, patients get the appropriate level of care and criminalism is reduced.

Toshi Shibata, M.D., Psychiatry, general addiction, and forensics, Honolulu, presented the problems of mental health care and the penal and legal systems. Since 1980 there has been a great increase in prisoners, many are mental patients. This is a national trend, many are younger males, substance abusing and previously hospitalized. Police are perceived as more efficient for deviant or criminal behavior. Patients are often sentenced for one year or more. The state has a duty to provide medical care for those whom it is punishing by incarceration. Now when a mental patient is arrested, a diversion team can interrupt proceedings to avoid jail. A module is provided for rehabilitation, a pyramid theory of human motivation. At the bottom is physiological needs, and continues up through safety, belonging, esteem, and at the top self-actualization.

D. Douglas Smith, M.D., Psychiatry, Director of Medical Education, Queen's Medical Center for Behavioral Health Services, Honolulu was the final speaker on the program, and presented material on in-patient mental health care in Hawaii. He presented a brief history of public behavior toward mental patients, and briefly described current available outpatient facilities. Hospitalization becomes necessary when a patient's behavior is bizarre or dangerous to self or others, in cases of substance abuse disorder, when medication must be closely monitored, when a less restrictive setting has failed, or when a complex, unstable co-morbid condition exists. This may come through a court order, medical decision, crisis team referral, direct admission, or through the hospital emergency department. Therapy includes physiological needs, safety, psychiatric services, education, and psycho-social rehabilitation. For the future, Hawaii requires increased quantity, a prudent court system, effective medical staff, and admission based only on medical necessity.

Editor's Note:
Mahalo to Russell Stodd MD for his excellent coverage of another very busy HMA Annual meeting.

Russ, thanks also for your continued monthly "Weathervane" contributions. You always get so much useful information into one page.

Poems by Dr. Robert S. Flowers

CHRISTMAS BALLET

I stopped the car for Susan to shop
At the autoteller...and out she hopped.
I glanced away while she worked the machine
To study the mountains, covered in green.

My eyes returned to the front of the bank
Where she took her cash and murmured a "thank"
For modern technology which never sleeps,
And gives back on holidays, the money it keeps.

She smiled as she turned to approach the car,
But such as the winds here at Christmas are-
They lifted her hat with its embroidered sash
And she lunged for it using the hand with the cash!

Those winds who targeted first her hat,
Seized on that handful of bills stacked so fat.
They swirled in the air as high as the roof
Reminiscent of movements in a ***Keystone Cops*** Spoof!

She looked like a puppy snapping at flies,
Grasping for "twenties" espied by her eyes.
Leaping and jumping in a comic ballet
A scene I'll remember 'til I'm old and gray.

Pirouettes, and toe stands, arabesques, swan dives
Fouettes and entrechats, unusual for wives.
Then all of a sudden the wind stilled its force,
But the "twenties" recovered were deficient, of course!

A lone one was missing: I joined in the search,
Scouring the shrubs and the trees for a "perch"
At last we found - But I really must say...
I'd surely have paid it...for that Christmas Ballet

Robert S. Flowers
August 25, 1990

HANUKKAH

Lord of Hosts, this Feast of Lights
Grows one candle every night
For Hanukkah, reDedication
Of Jerus'lem's restoration.

With this act that seems so simple
We remember your great temple.
How the oil kept burning bright
When fuel was there for just one night.

But let your lamp inside my heart
Burn forever...as a start!

Amen.

Medical School Hotline

The Cancer Research Center of Hawaii University of Hawaii

Carl-Wilhelm Vogel, MD, PhD, Director
Cancer Research Center of Hawaii

The Cancer Research Center of Hawaii is an organized research unit of the University of Hawaii (UH). Together with the School of Medicine, the School of Nursing, and the Pacific Biomedical Research Center (PBRC), the Cancer Research Center constitutes one of the four independent biomedical units at UH Manoa. The Cancer Center was initially organized in 1971 by several research-oriented faculty from the PBRC and the School of Medicine in response to the National Cancer Act. In 1979, the Center received a construction grant from the National Cancer Institute (NCI) which supported with local matching funds the erection of its five-story building on Lauhala Street adjacent to Queen's Medical Center.

On July 1, 1996, the Cancer Center was awarded a Cancer Center Support Grant from the NCI and became an NCI-designated Cancer Center, a highly coveted designation reserved for cancer centers whose research programs are judged to be of highest quality by a stringent peer review process. There are currently only 59 NCI-designated cancer centers in the nation.

On July 1, 2000, the Cancer Center Support Grant was renewed for five years with an annual budget of over 2 million dollars representing almost a tripling of the past support. The renewal of the Cancer Center Support Grant recognizes the truly remarkable success of Cancer Center faculty in their research efforts as documented by an increasing number of publications (currently more than a hundred annually), many of which appear in prestigious peer-reviewed national and international journals. The successful research by Cancer Center faculty is paralleled by their ability to obtain research funding. The total financial support of the Cancer Center is approximately 20 million dollars annually, the majority of which is derived from national peer-reviewed sources, primarily the NCI, other NIH institutes, and the Department of Defense. Less than 2 million dollars are from the State of Hawaii which implies that Cancer Center faculty convert one state dollar into approximately ten federal dollars. This ratio makes the Cancer Center the most successful research unit of the University of Hawaii. In addition, by employing more than 200 people and infusing over 20 million dollars into the local economy, the Cancer Center is also an economic engine for the State of Hawaii.

The Cancer Center's research programs focus on areas of which Hawaii's environment offers particular opportunities or which are of particular relevance for Hawaii. An overriding research theme is biodiversity that includes the ethnic diversity of Hawaii's population (with their greatly varying risks for different cancers) and the biosphere of Hawaii and other Pacific islands (for discovery of new anticancer agents).

The Center's research activities are currently organized into three research programs.

1. The Cancer Etiology Program encompasses both basic laboratory and epidemiologic scientists who seek to identify factors, both environmental and genetic, that increase or decrease the risk of cancer. Scientists in the program also investigate the molecular mechanisms that underlie the carcinogenic process. Particular emphasis is placed on the relationship between diet, genes, and cancer.

2. The Prevention and Control Program designs, develops, implements, and evaluates interventions to reduce cancer incidence, morbidity, and mortality and to improve the quality of life for cancer patients. Research in this area spans the continuum from primary prevention and early detection to treatment and long-term survivorship. Consistent with the Cancer Center's thematic focus, current studies explore ethnic differences in risk behavior, biological risk, health services utilization, and psychological factors that relate to cancer.

3. The Natural Products Program is a program of drug discovery based on the historical experience that many of today's active anticancer drugs are derived from naturally-occurring products. As a multidisciplinary approach which involves biologists, chemists, and pharmacologists, the members of the Natural Products Program collect biological specimens, mainly microorganisms and plants, from Hawaii and other Pacific Islands, screen for anticancer activity, isolate and chemically identify the active compounds, and study their mode of action. A major success of this program is the identification of cryptophycin, a compound which bears the promise of becoming a new anticancer agent. The compound is licensed to a major pharmaceutical company and is undergoing phase II testing.

In addition to the three research programs, the Cancer Center also conducts the following activities. 1. The Clinical Trials Unit offers approximately 150 clinical trials to cancer patients in the State of Hawaii. The activity is primarily funded by the NCI through a minority-based community clinical oncology program. Currently, only 2 to 3 percent of Hawaii adult cancer patients are enrolled in clinical trials. In contrast, approximately 85 percent of Hawaii pediatric cancer patients are enrolled in clinical trial protocols. As the clinical trial enrollment is community-based, the vast majority of clinical trials conducted represent national cooperative group Phase III studies.

2. The Hawaii Tumor Registry is a program that receives its primary support from the NCI's Surveillance, Epidemiology, and End Results (SEER) program as well as support from the Department of Health. The registry is one of ten SEER sites nationwide.

3. Cancer Information Service, an NCI-supported nationwide network, is the source for the latest and most accurate cancer information for patients, their families, the general public, and health professionals. The information is provided through a toll free telephone number (1-800-4-CANCER) as well as outreach activities, frequently in collaboration with other local organizations to raise cancer awareness, particularly within native Hawaiians and other minorities in the State.

4. The Consultation Clinic provides consultation to cancer patients, mainly for second opinions and treatment decisions. This service, currently not very well-publicized in the community, represents the only clinical service. The Center faculty does not provide continuing care for cancer patients.

Although the primary focus of Cancer Center faculty is research,

virtually all Center faculty participate in various educational activities. These include primarily research education with activities at the undergraduate, graduate, and professional student levels. The faculty also participate in formal classroom teaching activities throughout various schools and colleges of UH including public health, medicine, psychology, and nutrition. Several Cancer Center members are graduate faculty of the new graduate program in Cell and Molecular Biology, a partnership of the Cancer Center, PBRC, and the School of Medicine. The Cancer Center also offers accredited continuing medical education, primarily targeted to the local physician community.

Despite its multitude of activities and a very successful research operation, the Cancer Center faces significant challenges. For one, the total number of full-time Cancer Center faculty is less than 20. That number is extremely small for the size of the research operation and makes the research programs vulnerable. Recruitment of additional faculty, however, is hampered by the severe shortage of space. The success of Cancer Center faculty in generating extramural research support has been paralleled by an increased number of research personnel, leading to overcrowding of the Cancer Center building and the necessity to operate several activities in satellite facilities elsewhere. Future growth and development will require additional space for the Cancer Center, preferably in the form of a new, dedicated building.

Another shortcoming of the Cancer Center, experienced daily by many Cancer Center faculty and clearly identified by the NCI review group that evaluated the Center in connection with the recent renewal of the Cancer Center Support Grant, is the difficulty of conducting patient-oriented research. Because the Cancer Center does not have its own patient base, translational and clinical research are cumbersome, and many types of clinical investigations such as innovative phase I trials with newly developed therapeutics cannot be performed. This is lamentable because it not only precludes the clinical testing of new drugs discovered in the Natural Products Program but also deprives all of Hawaii's cancer patients access to new investigational drugs. The Cancer Center will not be able to obtain the NCI designation as a "Comprehensive Cancer Center" without a clinical research program. It is anticipated that the Cancer Center in partnership with one or several of the major teaching hospitals will be able to develop a comprehensive outpatient care facility which would significantly expand the research capabilities of the Cancer Center and simultaneously improve the care for Hawaii's cancer patients.

The year 2000 will mark the 30th anniversary of the Cancer Research Center. Given the successes of the Center, this anniversary will be good reason to celebrate.
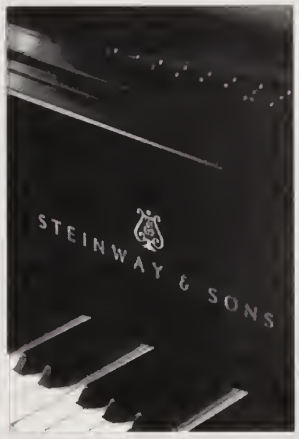
YOU'VE WAITED YOUR
WHOLE LIFE
DON'T WAIT
ANY LONGER
SAVE THOUSANDS OF DOLLARS BY SELECTING YOUR STEINWAY BEFORE THE DECEMBER FACTORY PRICE INCREASE

You've always dreamed of the day when the incomparable sound of a Steinway would fill your home. And now your moment has arrived.

Steinway Pre-Factory Price Increase Savings Opportunity...

Act Now And Save Thousands Selecting A New Steinway or Boston Piano.

Before the Factory Price Increase, you can save thousands of dollars on the entire line of hand-made Steinway pianos. We urge you to visit us before this rare opportunity passes you by.



SANDERS PIANO
946-6500
1500 S.KING STREET

Until there's a cure there's the American Diabetes Association.

End-of-Life Preferences in Hawaii

Kathryn L. Braun DrPH, Alvin T. Onaka PhD, and Brian Y. Horiuchi MPH

Abstract

Questions on end-of-life preferences were included in two statewide, random-sample telephone surveys. Findings suggest that Hawaii residents are similar to mainlanders on their rates of advance directive completion, their preference for dying at home, their desire for hospice care when dying, and their support for legalization of aid in dying. Physicians are encouraged to ask these questions directly of their patients as a first step to improving end-of-life care.

Introduction

How many Hawaii residents have advance directives? What proportion prefers to die at home, rather than in a health care facility? How many are familiar with and would want to access hospice care at life's end? What proportion supports physician aid in dying? How many feel society's priority should be to improve care to the dying rather than to legalize physician-assisted suicide? These questions related to end-of-life care were asked through random-sample, population-based surveys of adults in Hawaii.

Literature Review

Increasing attention is being paid to issues of death and dying and the need to improve end-of-life care. This is not surprising, as the nature of death has changed considerably over the century. No longer are the majority of individuals dying from infectious diseases, in childbirth, in infancy, or in large-scale accidents. Rather, most residents will die of chronic, disabling conditions in very late life. The availability of life-prolonging technology, facilities, and drugs tend to push patients, families, and providers to "do everything" in the last year of life, even if the chance of recovery is slim and the chance of pain and reduced quality of life is great.[1]

Nationally, medical care at the end of life comprises roughly 12% of the total health care budget and 27% of the Medicare budget.[2] Existing data on hospice care suggest that it offers a cost savings over hospital care for individuals in the last 6 months of their lives.[2] However, in Hawaii only about 20% of deaths occur under hospice and many of these individuals are referred to hospice in the last weeks or days before death.[3] In these cases, there is little time to provide comprehensive palliative care measures that can help an individual have a good death and can help a family prepare for and recover from the death of a loved one. It is important to note, as well, that none of Hawaii's physicians and few of Hawaii's nurses are certified in palliative medicine. Limited physician training in end-of-life care is a nationwide problem, as major medical textbooks barely address end-of-life care.[4]

In part because of our ability to delay death and prolong life, the U.S. has become a "death-denying" society and issues of death and dying often are not discussed. In Hawaii, attitudes and practices relative to death and dying are influenced additionally by the different cultures that comprise our society. Qualitative research conducted in 1995-1996 found differences in attitudes toward planning for death among five Asian and Pacific Islander ethnic groups, which reflected respondents' varying cultural and religious traditions.[5] This work was followed in 1997 by interviews with 245 adults in five ethnic groups–Caucasian, Chinese, Filipino, Hawaiian, and Japanese–which also found ethnic differences in end-of-life preferences.[6] For example, in response to a question about physician-assisted suicide, only 33% of Filipino respondents and 51% of Hawaiian respondents said they felt there were conditions under which it should be allowed, compared to 74% of Caucasian, 77% of Chinese, and 90% of Japanese respondents.[7]

For several years, Hawaii has been looking at the "living and dying with dignity" issue and has taken steps to improve care provided to dying people. In 1999, Hawaii's efforts were boosted by a 3-year seed grant from the Robert Wood Johnson Foundation, which supports the work of a statewide coalition called *Kokua Mau*, comprised of about 150 agencies and individuals. The Coalition is focusing on several of the issues identified by the Governor's Blue Ribbon Panel on Living and Dying with Dignity in its 1998 report.[8] These include recommending appropriate changes to state policy, increasing access to spiritually and culturally acceptable care at the end of life, educating the public, and educating health practitioners. Leadership of the *Kokua Mau* Coalition rests in four agencies: the Executive Office on Aging, the U.H. Center on Aging, the Hawaiian Islands Hospice Organization, and the St. Francis International Center of Healthcare Ethics.

An important first step in improving care is to assess public knowledge, attitudes, and practices regarding end of life. Most of the previous studies on end-of-life preferences in Hawaii, however, have suffered from convenience sampling, i.e., participants were identified from senior centers, churches, and other organizations that attracted large numbers of individuals of these specific ethnic groups. Reported in this paper are findings from questions added to on-going surveys, which allowed the testing of four hypotheses.

Hypotheses

Hypothesis 1: Advance Directive Completion. The percentage of Hawaii residents with advance directives (living will and health care power of attorney) will be similar to or higher than rates found on the U.S. mainland.

Correspondence to:
Kathryn L. Braun DrPH
Center on Aging
Dept. of Public Health Sciences and Epidemiology
John A. Burns School of Medicine
University of Hawaii
1960 East-West Road, Biomed C-106
Honolulu, Hawaii 96822

Justification. Advance directives are manifestations of the western concepts of autonomy, self-determination, and trust in legal systems, and cultural and religious traditions of Asian and Pacific Islanders may present barriers to advance directive completion.[9] In 1995-1996 focus groups conducted by the U.H. Center on Aging, some Native Hawaiian participants said that long-time distrust of the medical and legal systems presented a barrier to their signing documents, some Filipinos expressed a reluctance to do something that may "go against" God's plan for them, and some Chinese and Vietnamese participants (especially new immigrants) did not have advance directives because it was "bad luck" to talk about or plan for death.[5] In the 1997 study of 250 adults in five ethnic groups, however about 50% reported having advance directives.[6] In comparison, mainland studies suggest that advance directives have been completed by 10-25% of the general public.[10]

Hypothesis 2: Dying at Home. The majority of Hawaii residents would not want to die at home.
Justification. In work to improve end-of-life care, there is a common assumption that people would like to die at home rather than in a hospital or nursing home, and mainland survey data suggest that most Americans would prefer this.[11] But does this hold true in Hawaii? As learned in the 1995-1996 focus groups, a number of Asian and Pacific Islanders are from cultural traditions that believe in ghosts, karma, and a potential negative impact that an in-home death may have on the living and, possibly, on re-sale value of the home.[5]

Hypothesis 3: Desire for Hospice. The percentage of Hawaii residents who would want access to hospice services at life's end is similar the rates on the U.S. mainland.
Justification. In work to improve end-of-life care, there is a common assumption that people would like to avail themselves of hospice services (these can be provided in institutional and home settings). A similar question has not yet been asked of Hawaii residents. Local hospices report serving about 1,500 patients a year, representing about 19% of deaths, but estimate that two to three times as many dying individuals could benefit from hospice, and do not utilize it.[8,12] As reasons for low utilization could include lack of preference for hospice or lack of familiarity about hospice, our question on hospice probed for familiarity as well as preference.

Hypothesis 4: Legalizing Aid in Dying vs. Improving End-of-Life Care. Level of support for aid in dying among Hawaii residents is similar to that found on the U.S. mainland. When asked to choose between spending effort to legalize physician-assisted suicide vs. improving care to the dying, however, more Hawaii residents will choose the latter.
Justification. Mainland studies have found that 45-75% of respondents support physician- assisted suicide, however support among minority Americans runs 10-20 percentage points below support among Caucasians.[13-15] Compared to the mainland, support for aid in dying may be lower in Hawaii as the state is comprised mostly of non-Caucasians and because research suggests that some Asian and Pacific Islander cultures would oppose it. For example, members of the Catholic faith (including the majority of the 200,000 Hawaii residents of Filipino ancestry), do not condone suicide or euthanasia.[16] Other cultural traditions consider a suicide to be a "bad death" that might lead to bad consequences for surviving family members.[5] However, about 50% of the 245 adults who participated in our 1997 survey supported physician-assisted suicide, i.e., that a physician be allowed to provide a patient with the means to end his/her own life, such as a drug that can be lethal in certain doses.[7] Also, 67% of 419 residents polled in a 1998 telephone survey sponsored by the Honolulu Star-Bulletin favored "a law which would permit physician-assisted death under carefully controlled circumstances in Hawaii."[8]

There is growing recognition that people may support physician-assisted suicide because of the currently poor state of end-of-life care, which stems from attitudinal, behavioral, education, and economic barriers to providing appropriate, humane, and compassionate care for the dying.[17] Thus, the Robert Wood Johnson Foundation supported a survey that included this question: "In your opinion, how should we deal with the problem of end-of-life pain and suffering? Should our priorities be making physician-assisted suicide legal or improving care to the dying?" When asked to prioritize, 65% of respondents favored improving care to the dying while only 23% favored legalizing physician-assisted suicide.[18] We felt a similar split would be found among Hawaii residents.

Method

Design

Random-sample surveys increase the ability to generalize findings to the larger population and allow comparisons to studies in other locales. To test our four hypotheses, funding was secured from Hawaii Community Foundation for special analysis of relevant questions added to two existing surveys: 1) the 1998 Behavioral Risk Factor Surveillance System (BRFSS) sponsored by the Hawaii Department of Health and 2) a 1999 OmniTrak survey on health.

Data Sources and Analysis

1998 Behavioral Risk Factor Surveillance System (BRFSS). This telephone survey, sponsored by the U.S. Centers for Disease Control and conducted annually by the Hawaii Department of Health, gathers data from a random sample of Hawaii residents. In 1998, data were collected by telephone from 2,153 individuals age 18 and older. Characteristics of the sample are shown in Table 1. Once data collection was completed, the sample characteristics were compared with census distributions and the responses were weighted (adjusted) to reflect the population of the state, rather than of the sample. For example, in 1998 Caucasians were over-represented (comprising 37% of the sample, but only 22% of the state's population) while Native Hawaiians were under-represented (comprising 14% of the sample, but 21% of the state's population). The weighting procedure compensated for these and other discrepancies so that response rates to the survey questions could be generalized to the state as a whole. Following the weighting procedure, data were analyzed by gender, by age group, and by ethnicity. In the tables displaying findings from the BRFSS data (Tables 2, 3, 6, and 7), the "n" represents the actual number of individuals who gave a certain response. This is followed by the weighted percent, or the proportion that would have given this response if the sample accurately reflected the state's population.

Four questions related to end-of-life care were included that year:

Table 1.— Sample characteristics

	BRFSS n (%)	OmniTrak n (%)
Gender		
Male	933 (43)	321 (46)
Female	1,220 (57)	379 (54)
Age group		
18-24	159 (7)	123 (18)
25-44	901 (42)	275 (39)
45-64	714 (33)	204 (29)
65+	357 (17)	64 (9)
Unknown/refused	12 (<1)	34 (5)
Ethnicity		
Caucasian	803 (37)	242 (35)
Chinese	80 (4)	14 (2)
Filipino	232 (11)	67 (10)
Hawaiian	305 (14)	120 (17)
Japanese	475 (22)	90 (13)
Other	250 (12)	167 (24)
Unknown/refused	8 (<1)	
Education		
< HS	157 (7)	
HS grad	652 (30)	
Some college	607 (28)	
College grad	735 (34)	
Unknown/refused	2 (<1)	
Residence		
Oahu		400 (57)
Neighbor Island		300 (43)
Total	2,153 (100)	700 (100)

1) A living will is the written instructions you give about the kind of medical treatment you want or don't want. You fill it out before you fall ill so the doctors will know what you want if you ever get so sick you can't decide for yourself. Do you have a living will? (yes, no, unknown/refused); 2) A health care power of attorney is a written document that lets you designate someone else to make decisions regarding your health care if you get so sick that you can't decide for yourself. Do you have a health care power of attorney? (yes, no, unknown/refused); 3) Do you think a person has a moral right to end his/her life when faced with an incurable illness? (yes absolutely, perhaps depending on the circumstances, no, unknown/refused); and 4) Should doctors be allowed by law to end a patient's life by some painless method, if the ill person and his/her family requested it? (yes absolutely, perhaps depending on the circumstances, no, unknown/refused).

1999 OmniTrak Survey. In fall 1999, OmniTrak conducted a statewide, telephone survey of a stratified probability sample of adult residents; 700 individuals were included, 400 from the City and County of Honolulu and 100 from each of the other counties. Sample characteristics are shown in Table 1. These data were not weighted to correct for discrepancies between sample and population characteristics. Based on sample size and distribution, the sample error is ±4% for the entire statewide sample of 700, ±5% for Oahu's sample of 400, and ± 10% for neighbor island county samples of 100. Data were analyzed by gender, age group, ethnicity, and county.

The survey asked health-related questions and included three questions related to death and dying. These were: 1) Where would you want to be if you were dying? (home, hospital, nursing home, other, unknown/refused); 2) Regardless of what place you want to die, would you want hospice services? (yes, no, unfamiliar with hospice care, unknown/refused); and 3) In your opinion, how should we deal with the problem of end-of-life pain and suffering? Should our priorities be making physician-assisted suicide legal or improving care to the dying? (making physician-assisted suicide legal, improving care to the dying, unknown/refused). The first two questions were developed by the *Kokua Mau* team while the third question was identical to one included on a survey sponsored by the Robert Wood Johnson Foundation in March 1999.[18]

Findings

Advance Directives

Data from the BRFSS survey suggest that about 29% of Hawaii residents 18 and older have a living will (Table 2) and about 22% have a health care power of attorney (Table 3). These figures look comparable, if not at the high end, of rates found across the country (10-25%).[10] Rates of advance directive completion increased dramatically by age. In the 18-24 age group, only 5% had a living will and only 6% had a health care power of attorney. In the 65+ age group, however, 62% had a living will and 49% have a health care power of attorney. Our hypothesis, that the percentage of Hawaii residents with advance directives would be similar to or higher than rates found on the U.S. mainland, was supported.

Table 2.— Do you have a living will? (Source: BRFSS, N=2,153)

	Yes n (%)	No n (%)	Unk/Ref n (%)
Gender			
Male	277 (30)	647 (69)	9 (1)
Female	364 (27)	841 (71)	15 (2)
Age group			
18-24	7 (5)	151 (94)	1 (1)
25-44	151 (17)	742 (82)	8 (1)
45-64	244 (34)	465 (65)	5 (1)
65+	235 (62)	122 (35)	10 (3)
Unknown/refused	4 (30)	8 (70)	
Ethnicity			
Caucasian	279 (36)	520 (63)	4 (<1)
Chinese	25 (36)	55 (63)	
Filipino	32 (13)	199 (86)	1 (1)
Hawaiian	65 (22)	234 (77)	6 (1)
Japanese	177 (34)	288 (63)	10 (3)
Other	60 (23)	187 (76)	3 (2)
Unknown/refused	3 (29)	5 (71)	
Education			
< HS	52 (32)	103 (66)	2 (2)
HS grad	165 (25)	481 (74)	6 (1)
Some college	183 (27)	415 (72)	9 (1)
College grad	241 (34)	488 (65)	6 (1)
Unknown/refused		1 (50)	1 (50)
Total	641 (29)	1,488 (70)	24 (1)

Differences in advance directive completion rates, however, were seen by ethnicity, lending validity to our earlier findings from focus groups and structured interviews with convenience samples of Hawaii residents.[6] Specifically, significantly fewer individuals of Filipino and Hawaiian ancestry had living wills (13% and 22%, respectively) than did individuals of Japanese, Chinese, and Caucasian ancestry (33%, 36%, and 36%, respectively). Similar ethnic patterns were seen for the health care power of attorney. Interestingly, years of education did not seem to impact advance directive completion rates. Gender differences were not expected and were not found.

Table 3.— Do you have health care power of attorney? (Source: BRFSS, N=2,153)

	Yes n (%)	No n (%)	Unk/Ref n (%)
Gender			
Male	218 (23)	690 (75)	25 (2)
Female	283 (22)	897 (75)	40 (4)
Age group			
18-24	11 (6)	143 (92)	5 (2)
25-44	113 (13)	766 (85)	22 (2)
45-64	193 (27)	496 (69)	25 (4)
65+	182 (49)	173 (48)	12 (3)
Unknown/refused	2 (32)	9 (49)	1 (19)
Ethnicity			
Caucasian	234 (30)	545 (68)	24 (3)
Chinese	18 (27)	56 (67)	6 (6)
Filipino	23 (11)	203 (87)	6 (3)
Hawaiian	53 (20)	244 (77)	8 (3)
Japanese	125 (24)	331 (73)	19 (3)
Other	46 (18)	202 (82)	2 (1)
Unknown/refused	2 (26)	6 (74)	
Education			
< HS	46 (31)	110 (69)	1 (2)
HS grad	129 (19)	506 (78)	17 (3)
Some college	137 (20)	454 (78)	16 (2)
College grad	189 (26)	516 (70)	30 (4)
Unknown/refused		1 (50)	1 (50)
Total	501 (22)	1,587 (75)	65 (3)

Preferred Place of Death

Responses to the OmniTrak survey question, "Where would you want to be if you were dying?" are shown in Table 4. Of the 700 respondents, 65% said they would like to be at home and 8% would want to be in a hospital or nursing home. The last column in Table 6 combines individuals that named another place (12%) and those who said they didn't know or refused to answer (15%). Overall, the data suggest that fully two-thirds of Hawaii residents would prefer to die at home, disproving our hypothesis.

Some variations were seen by gender, age group, and ethnicity, however. More females than males reported preferring a home death, 74% vs. 59%. By age group, 71% of young and middle-aged adults (age 25-65) said they would want to be at home if they were dying, compared to about 60% of respondents in the younger and older age groups. Ethnically, preferences ranged from a low of 43% among Chinese to a high of 76% among Caucasian respondents.

Table 4.— Where would you like to be if you were dying? (Source: Omni Trak, N=700)

	Home n (%)	Facility n (%)	Unk/Ref n (%)
Gender			
Male	188 (59)	27 (8)	106 (33)
Female	280 (74)	24 (6)	75 (20)
Age group			
18-24	76 (62)	8 (6)	39 (32)
25-44	195 (71)	19 (7)	61 (22)
45-64	145 (71)	12 (6)	47 (23)
65+	37 (58)	11 (17)	16 (25)
Missing = 34 (5)			
Ethnicity			
Caucasian	184 (76)	14 (6)	44 (18)
Chinese	6 (43)	1 (7)	7 (50)
Filipino	36 (54)	10 (15)	21 (31)
Hawaiian	85 (71)	8 (7)	27 (22)
Japanese	61 (68)	10 (11)	19 (21)
Missing = 167 (24)			
Residence			
Oahu	258 (65)	32 (8)	110 (28)
Neighbor Island	210 (70)	19 (8)	71 (24)
Total	453 (65)	55 (8)	193 (27)

Table 5.— Regardless of what place you want to die, would you want hospice services? (Source: OmniTrak, N=700)

	Yes n (%)	No n (%)	Not farmiliar w/hospice n (%)
Gender			
Male	166 (52)	82 (26)	39 (12)
Female	261 (69)	76 (20)	15 (4)
Age group			
18-24	63 (51)	36 (29)	16 (13)
25-44	174 (63)	60 (22)	19 (7)
45-64	137 (67)	37 (18)	9 (4)
65+	36 (56)	15 (23)	6 (9)
Missing = 34 (5)			
Ethnicity			
Caucasian	158 (65)	46 (19)	13 (5)
Chinese	11 (79)	1 (7)	
Filipino	37 (55)	12 (18)	9 (13)
Hawaiian	73 (61)	37 (31)	5 (4)
Japanese	54 (60)	17 (19)	9 (10)
Missing = 167 (24)			
Residence			
Oahu	236 (59)	101 (25)	28 (7)
Neighbor Island	191 (64)	57 (19)	26 (9)
Total	420 (60)	161 (23)	55 (8)

Desire for Hospice

Shown in Table 5 are responses to the question, "Regardless of what place you want to die, would you want hospice services?" Fully 60% agreed, while 23% did not, supporting our hypothesis. Only 8% said they were unfamiliar with the concept of hospice care. The remainder of the sample, about 9%, did not know or refused to answer this question. The OmniTrak data suggest that more females would want hospice services than males, 69% and 52%, respectively. Almost 80% of the Chinese respondents said they would want hospice, compared to only 55% of Filipinos. Although inter-age-group differences were small, a greater proportion of individuals in the 45-64 age group said they would want hospice than in any other age group.

Legalizing Aid in Dying vs. Improving End-of-Life Care

Two questions were added to the BRFSS and one was added to the OmniTrak survey to explore these issues. As shown in Table 6, BRFSS data suggest that 64% of Hawaii residents unconditionally agreed that "a person has a moral right to end his/her life, when faced with an incurable illness." Another 9% responded "perhaps, depending on the circumstances." Only 17% said no. Also, 186 respondents, 8.4% of the sample, said they did not know or refused to answer this question (not shown in table). Responses to the question, "Should doctors be allowed by law to end a patient's life by some painless method, if the ill person and his/her family requested it?" are shown in Table 7. Similarly, 63% agreed unconditionally, 13% said "perhaps," 15% said no, and 193 (9%) said they did not know or refused to answer this question. As with other issues, however, variation in support was seen by ethnic group, with less support among Filipinos (45%) and Hawaiians (54%), and more support among Caucasians (70%), Chinese (71%), and Japanese (75%). This pattern of ethnic difference mirrors that found in our earlier structured interviews.[7] Small differences were seen by gender, age, and education, with greater support among males than females, in the 45-64 age group, and among those with more years of education.

The final question asked OmniTrak respondents, "In your opinion, how should we deal with the problem of end-of-life pain and suffering? Should our priorities be making physician-assisted suicide legal or improving care to the dying?" As shown in Table 8, when asked to choose between these two options, 52% thought priority should be given to improving care to the dying. Still, 28% preferred focusing priorities on legalizing physician-assisted suicide. Looking across ethnicities, the Filipino group stands out with the highest proportion in the "don't know/refused" group (27%) and the smallest proportion in the "legalize PAS" group (13%). Differences by age, gender, and Oahu/Neighbor Island residence were small. As Hawaii's overall response distributions on these questions are similar to those found on the mainland, the last hypothesis was supported.

Table 6.— Do you think that a person has a moral right to end his/her life, when faced with an inccurable illness? (Source: BRFSS, N=2,153)

	Yes n (%)	Perhaps n (%)	No n (%)
Gender			
Male	685 (67)	79 (9)	130 (16)
Female	751 (61)	114 (9)	235 (19)
Age group			
18-24	100 (60)	17 (10)	29 (19)
25-44	581 (64)	80 (9)	161 (18)
45-64	497 (70)	59 (8)	109 (15)
65+	222 (62)	36 (10)	65 (18)
Unknown/refused	9 (75)	1 (4)	1 (19)
Ethnicity			
Caucasian	572 (70)	69 (8)	118 (16)
Chinese	57 (71)	7 (7)	11 (17)
Filipino	107 (45)	19 (9)	68 (30)
Hawaiian	179 (54)	39 (16)	61 (18)
Japanese	355 (75)	38 (7)	45 (7)
Other	154 (59)	20 (7)	61 (26)
Unknown/refused	5 (67)	1 (15)	1 (9)
Education			
< HS	82 (57)	11 (5)	34 (19)
HS grad	400 (60)	64 (10)	133 (20)
Some college	412 (68)	56 (8)	92 (16)
College grad	513 (68)	62 (10)	106 (15)
Unknown/refused	2 (100)		
Total	1,409 (64)	193 (9)	365 (17)

Table 7.— Should doctors be allowed by law to end a patient's life by some painless method, if the ill person and his/her family requested it? (Source: BRFSS, N=2,153)

	Yes n (%)	Perhaps n (%)	No n (%)
Gender			
Male	637 (66)	96 (13)	133 (14)
Female	748 (61)	140 (13)	206 (17)
Age group			
18-24	109 (65)	11 (8)	28 (19)
25-44	570 (63)	100 (11)	153 (17)
45-64	477 (67)	78 (11)	102 (14)
65+	221 (60)	45 (14)	55 (15)
Unknown/refused	8 (66)	2 (14)	1 (19)
Ethnicity			
Caucasian	534 (65)	88 (13)	124 (15)
Chinese	57 (76)	6(6)	9 (12)
Filipino	109 (44)	28 (16)	60 (26)
Hawaiian	190 (57)	39 (17)	49 (16)
Japanese	336 (75)	45 (9)	46 (7)
Other	153 (63)	29 (10)	51 (21)
Unknown/refused	6 (76)	1 (16)	
Education			
< HS	82 (53)	17 (15)	30 (14)
HS grad	410 (61)	68 (11)	115 (19)
Some college	405 (87)	73 (15)	82 (12)
College grad	486 (65)	78 (11)	112 (15)
Unknown/refused	2 (100)		
Total	1,385 (63)	236 (13)	339 (15)

Table 8.— In your opinion, how should we deal with the problem of end-of-life pain and suffering? Should our priorities be a) making physician-assisted suicide legal? or b) improving care to the dying? (Source: Omni Trak, N=700)

	Legalize PAS n (%)	Improve care n (%)	Unk/Ref n (%)
Gender			
Male	97 (30)	158 (49)	66 (21)
Female	110 (29)	204 (54)	65 (17)
Age group			
18-24	29 (24)	61 (50)	33 (27)
25-44	87 (32)	145 (53)	43 (16)
45-64	67 (33)	107 (53)	30 (15)
65+	16 (25)	32 (50)	16 (25)
Missing = 34 (5)			
Ethnicity			
Caucasian	93 (38)	113 (47)	36 (15)
Chinese	4 (29)	8 (57)	2 (14)
Filipino	9 (13)	40 (60)	18 (27)
Hawaiian	31 (26)	66 (55)	23 (19)
Japanese	29 (32)	41 (46)	20 (22)
Missing = 167 (24)			
Residence			
Oahu	111 (28)	211 (53)	78 (20)
Neighbor Island	96 (32)	151 (50)	53 (18)
Total	198 (28)	362 (52)	139 (20)

Discussion

On the whole, it appears that Hawaii residents are similar to mainlanders on their rates of AD completion, their preference for being at home at life's end, their desire for hospice services when dying, and their support for the legalization of aid in dying.

That 29% of the general population and 62% of the 65+ age group reported having a living will is quite impressive, suggesting that advance directive completion rates in Hawaii are on the high end of the range of estimates found in mainland studies. These figures reflect well on our local medical facilities that are required under the Patient Self Determination Act to provide information about advance directives. Also to be thanked are local programs, such as the U.H. Elder Law Program, and individuals, such as estate planning lawyers, that help individuals complete such documents. Recent legislative action resulted in the passage of a new advance directive law that consolidated older statutes on the living will, health care power of attorney, and organ donation under the Uniform Health Care Decisions Act 169 of 1999.[19] Many health care facilities are developing new forms, although an older living will document is still valid if it includes indication of nutrition/hydration preferences, as is the older durable power of attorney document. Under the new law, statutory damages for non-compliance with an individual's advance directive are $500 or actual damages plus attorney fees.[19]

Although the majority of Hawaii residents and other Americans state a preference for dying at home, in fact most deaths occur in facilities. In Hawaii, 63% of the 7,712 deaths in 1997 occurred in hospitals and only 21% occurred in the home.[20] Other studies offer several explanations for this discrepancy. First, while the majority of well adults may think they want to die at home, the proportion of terminally ill patients who desire a home death is probably less than 50% and the proportion of terminally ill patients who actually die at home is probably less than 30%.[21-22] Research suggests that desire for a hospital death is higher among terminally ill patients with small or over-burdened family.[21-22] The factor that most accounts for variance across states in place of death, however, is not related to patients or families. Rather, the risk of in-hospital death is higher for residents of regions with greater hospital bed availability and use.[11,23-24]

That 60% knew about and would want hospice services at life's end is gratifying, but this figure is much higher that the actual proportion who are dying under hospice care at this time. For example, of the 7,712 deaths in 1997, only 1,196 (15%) were attended by hospice at time of death. While rates increased to about 19% in 1999, it is estimated that two to three times as many dying individuals could benefit from hospice.[8,12] Recognizing that not all dying individuals are appropriate for hospice care and applying recommended referral criteria to the state's 1999 deaths, local hospices feel that they are only serving about half of appropriate cancer deaths, 10% of appropriate cardiac deaths, and 15% of appropriate chronic obstructive pulmonary disease deaths.[3,12]

Even more startling, the median length of stay in hospice seems to have decreased in the past few years, from about 40 days in 1997 to about 20 days in the first quarter of 2000.[3] A short length of stay in hospice decreases the opportunity to provide comprehensive palliative care measures that can help an individual have a good death and can help a family prepare for and recover from the death of a loved one. Physicians should increase their familiarity with hospice services and inform families of the benefits of hospice care at life's end. Applauded is the U.H. John A. Burns School of Medicine, which requires first-year students to train as hospice volunteers and continues to add didactic and practical training related to end-of-life care to its 4-year curriculum.[25]

Hawaii's major ethnic groups register different levels of support for aid in dying, with greater support seen among Chinese, Japanese, and Caucasian residents and less support seen among Filipino and Hawaiian residents. On average, however, 64% of Hawaii residents support a person's moral right to end his/her life when faced with an incurable illness and 63% feel that doctors should be allowed by law to end a patient's life by some painless method if the ill person and his/her family requests it. When forced to choose whether to focus on legalizing physician-assisted suicide or improving end-of-life care, more Hawaii residents said to focus on improving end-of-life care (52% vs. 28%).

Although not asked in either Hawaii survey, it is interesting to note that the mainland survey from which this question was taken also asked about respondents' impressions of the quality of end-of-life care. Very few felt that the current medical care system did an excellent job caring for dying patients and almost 50% said it did a poor or fair job in helping patients to remain pain-free.[18] Clinical policy for care at the end-of-life is being advanced through the development and promulgation of Core Principles for End-of-Life Care which, by 1999, had been adopted in full or part by the American Medical Association,13 subspecialty societies, and the Joint Commission for the Accreditation of Healthcare Organiza-

tions (JCAHO) (Table 9).[26] Physicians are encouraged to contact their professional societies to learn more about specific recommendations for their subspecialty. JCAHO attention should work to improve hospital practices related to end-of-life care as well.

Table 9.— Core Principles for End-of-Life Care[26]

Clinical policy of care at the end of life and the professional practice it guides should:

1. Respect the dignity of both patient and caregivers;
2. Be sensitive to and respectful of the patient's and family's wishes;
3. Use the most appropriate measures that are consistent with patient choices;
4. Encompass alleviation of pain and other physical symptoms;
5. Assess and manage psychological, social, and spiritual/religious problems;
6. Offer continuity (the patient should be able to continue to be cared for, if so desired, by his/her primary care and specialist providers);
7. Provide access to any therapy which may realistically be expected to improve the patient's quality of life, including alternative or nontraditional treatments;
8. Provide access to palliative care and hospice care;
9. Respect the right to refuse treatment;
10. Respect the physician's professional responsibility to discontinue some treatments when appropriate, with consideration for both patient and family preferences;
11. Promote clinical and evidence-based research on providing care at the end of life.

Limitations

A random-sample survey is the preferred method for gathering data on public opinion. Still, this method has its limitations. For example, individuals who participate in telephone surveys must have phones, must be home when the pollster calls, must answer the telephone (surveyors hang up without leaving a message if they reach an answering machine), and must have the time and willingness to answer the survey questions. Thus, the final survey sample might not reflect true population demographics. While the BRFSS applies a weighting procedure to correct for this, most surveys, including the OmniTrak survey, do not. In the latter, only 14 individuals of Chinese heritage participated, enlarging the margin of error around estimates for this group. Still, it is validating that the same age/ethnic variances in advance directive completion and PAS support were similar in this population-based survey and the earlier convenience-sample studies.

Conclusion

This study provides physicians with additional information about Hawaii resident preferences at the end of life. As public attention and consumer awareness about end-of-life issues increase, it is imperative that healthcare systems encourage physicians and patients to discuss options and preferences. Research suggests that outpatients want their doctors to initiate discussions about advance planning, and that these discussions should occur after their physician-patient relationship is established but while the patient is still well.[10] Conversations should address values and expectations related to life prolongation, proxy decision making, preference of place of death, potential benefits of hospice, and so forth.[27] These conversations take time, and providers and insurers must develop mechanisms that will allow these conversations to take place.[27]

References

1. SUPPORT Principal Investigators. A controlled trial to improve care for seriously ill hospitalized patients. *JAMA.* 1995;274:1591-1598.
2. Emanuel EJ. Cost savings at the end of life: What do the data show? *JAMA.* 1996;275:1907-1914.
3. Zeri K. Personal communication, Feb 25, 2000.
4. Carron AT, Lynn J, Keaney P. End-of-life care in medical textbooks. *Ann Intern Med.* 1999;130:82-86.
5. Braun KL, Nichols R. Cultural issues in death and dying. *Hawaii Med J.* 1996;55:260-264.
6. Braun K. Surveying community attitudes towards end-of-life decision making. Honolulu HI: University of Hawaii. 1998.
7. Braun K. Do Hawaii residents support physician-assisted death: A comparison of five ethnic groups. *Hawaii Med J.* 1998;5:529-534.
8. Hawaii Executive Office on Aging. *The Governor's blue ribbon panel on living and dying with dignity: final report.* Honolulu HI: Author. 1998.
9. Yeo G, Hikoyeda N. Cultural issues in end-of-life decision making among Asians and Pacific Islanders in the United States. In: Braun K, Pietsch J, Blanchette P. eds. *Cultural Issues in End- of-Life Decision Making.* Thousand Oaks CA: Sage, 2000.
10. Miles SH, Koepp R, Weber EP. Advance end-of-life treatment planning: a research review. *Arch Intern Med.* 1996;156:1062-1068.
11. Tolle SW, Rosenfeld AG, Tilden VP, Park Y. Oregon's low in-hospital death rates: what determines where people die and satisfaction with decisions on place of death? *Ann Intern Med.* 1999;130:681-685.
12. Zeri K. Is hospice helping all that we can? *Hospice Rounds.* 1999;21(1):1-2.
13. Benson JM. The polls–trends: end-of-life issues. *Pub Opinion Q.* 1999;63:263-277.
14. Blendon RJ, Szalay US, Knox RA. Should physicians aid patients in dying? *JAMA.* 1992;267:2658-2662.
15. Lichtenstein RL, Alcser KH, Corning AD, Bachman JG, Doukas DJ. Black/white differences in attitudes toward physician-assisted suicide. *J Natl Med Assn.* 1997;89:125-133.
16. Alexander M. Catholic perspectives on euthanasia and assisted suicide: the human person and the quest for meaning. In: Braun K, Pietsch J, Blanchette P. eds. *Cultural Issues in End-of-Life Decision Making.* Thousand Oaks CA: Sage, 2000.
17. Foley KM. Competent care for the dying instead of physician-assisted suicide. *NEJM.* 1997;336:54-57.
18. Robert Wood Johnson Foundation. Improving care at the end of life: what has the Kevorkian case taught us? *Advances.* 1999.
19. Uniform Health Care Decisions Act (modified), Act 169. Hawaii Legislative Session, 1999.
20. Horiuchi BY. Personal communication, Apr. 24, 2000.
21. Fried TR, van Doorn C, O'Leary JR, Tinetti ME, Drickamer MA. Older persons' preferences for site of terminal care. *Ann Intern Med.* 1999;131:109-112.
22. McWinney IR, Bass MJ, Orr V. Factors associated with location of death (home or hospital) of patients referred to a palliative care team. *Can Med Assoc.* 1995;152:361-367.
23. Pritchard RS, Fisher ES, Teno JM, Sharp SM, Reding DJ, Knaus WA, Wennberg JE, Lynn J. Influence of patient preferences and local health system characteristics on the place of death. *Am Geriatr Soc.* 1998;46:1242-1250.
24. Dartmouth Medical School, Center for Evaluative Clinical Sciences. *Dartmouth Atlas of Health Care.* Chicago IL: American Hospital Publishing. 1999.
25. Tan SY, Kalua P, Sakai D. Personal communication, Feb. 25, 2000.
26. Cassel CK, Foley KM. *Principles for care of patients at the end of life: an emerging consensus among the specialties of medicine.* New York NY: Milbank Memorial Fund. 1999.
27. Doukas DJ, McCullough LB. The values history: the evaluation of the patient's values and advance directives. *J Fam Prac.* 1991;32:145-153.



A is for Apple,
B is for Ball,
C is for Cancer.
Cancer?

Little Adam knows all about the grown-up subject of cancer. He's got it. But he's also got *St. Jude Children's Research Hospital* to help. To learn more, call St. Jude at **1-800-877-5833**.

Danny Thomas, Founder

Differing Attitudes Between Psychiatrists and Primary Care Providers at the Interface

Michael J. McGrath MD

Abstract

Objective: Market forces caused by managed care are shaping practice styles for both psychiatrists and primary care physicians. This study offers a sample of the attitudes of both groups of practitioners highlighting the differences. Method: Forty-two psychiatrists and primary care physicians (PCP) completed surveys. The responses of each group were compared using chi square analyses. Results: Psychiatrists and PCPs differed significantly on their: 1) degree of comfort in the other's traditional service domain - with PCPs more comfortable dealing with their patients' psychiatric problems than psychiatrists were dealing with their patients' medical problems, 2) perceived barriers to effective communication- psychiatrists acknowledge their own time constraints while PCPs blame their colleagues unavailability (actually an agreement that psychiatrists' availability is a limiting factor), 3) projected areas of interface in the future- with psychiatrists prioritizing collaboration on health maintenance while PCPs valued collaboration on prevention and referral as equally significant. Conclusions: Conflict between needs and expectations found in this pilot study, if shown in larger studies to be representative, will impact the success of changes in practice patterns encouraged by emerging managed care initiatives. These findings suggest that the discordant expectations between psychiatrists and PCPs about the interface of their practices deserve further study.

Recent changes in the healthcare delivery system have focused attention on the changing practice patterns between psychiatry and primary care, with some crossing-over into each other's service domain.[1,2] Though external forces may ultimately dictate the roles of the generalist and specialist, attitudes about the scope of practice among active practitioners and existing patterns of interaction between the groups will certainly impact the success of such mandates. Primary care's current role in mental health care delivery has been characterized as de facto responsibility for 50% of the nation's mentally ill population. Unfortunately the literature documents an inadequate record for appropriate diagnosis and treatment of mental disorders such as major depression.[3] Concerning their interaction with psychiatrists, PCPs have complained about psychiatrist's unavailability and unsatisfactory feedback on referrals.[4]

Correspondence to:
Michael J. McGrath MD
Kona Community Hospital
PO Box 69
Kealakekua, HI 96750

The state of medical care in psychiatric practice is also of concern. Studies have shown that half of outpatient psychiatric patients report medical problems while less than half of patients' significant physical disorders are recognized by psychiatrists.[5] Recent reviews have looked at the advantages and disadvantages of psychiatrists providing primary care for psychiatric patients.[6] In regards to their relation to PCPs, psychiatrists have historically considered their role to be one of educator and consultant to their generalist colleagues,[7] but have been shown to be less than successful in this endeavor.[2]

As external and internal factors shape the evolution of roles for both psychiatrists and generalists, existing literature notes that patterns of interaction between these groups are influenced by the individual practitioner's perceptions and intentions.[7] In an effort to learn more about current perceptions that generalists and specialists have towards each other, a survey was designed to examine the following issues: 1) degree of comfort in treating problems in the other group's service domain 2) perceived amount, quality and impediments to communication, and 3) preferred future directions for interfacing, (such as the role for mental health screening instruments and treatment algorithms). To our knowledge a formal assessment of practitioner attitudes on these topics has not previously been published.

Method

Subjects

The focus for this study was a recent conference (6/97) held in Honolulu, Hawaii on new advances in pharmacotherapy of depression. The morning session was geared for psychiatrists and the afternoon session was designed forPCPs. A midday session for both groups was titled, "The Interface of Psychiatry and Primary Care: Where are we and where do we need to be?" The audience was comprised of 65 local Hawaii psychiatrists in the morning and a group of 46 local Hawaii PCPs in the afternoon. Prior to the midday presentation, each group received a copy of the survey about their attitudes regarding the interface of psychiatry and primary care. Respondents were asked to return their surveys as they left the conference. The issues addressed in the survey had not been discussed with the participants in an attempt to limit bias. There was no coercion or compensation for completing the surveys and the only time limit was that dictated by the length of the conference. Of 111 total physicians present, 38% completed surveys (45% of the psychiatrists and 28% of thePCPs).

Materials

The surveys consisted of six multiple choice questions that were identical for each group except that for the psychiatrists the questions were phrased to query their attitudes regarding medical problems in their patients or their relation toPCPs. The PCP's version was similarly focused on psychiatrists and psychiatric problems in their patients. The specific questions were: 1) Approximately how often do you interact? a. one time per week, b. one time per month, c. several times per year, d. almost never. 2) What proportion of your patients' (medical/psychiatric) problems do you feel comfortable dealing with? a. all, b. most, c. few, d. none. 3) At this time how would you characterize your communication with (psychiatrist/ PCP)? a. excellent/ very helpful b. moderate/ of some value, c. poor/ of little to no value. 4) In your view, difficulties in communication result from: a. time constraints, b. unavailability c. variation in overall approach to patient, d. lack of overlap in areas of professional emphasis, e. other. 5) If screening guidelines or decision tree algorithms were developed for mental illness diagnosis and treatment how would you describe your attitude? a. would welcome their development and use them often, b. envision there role as limited but useful to interface management, c. believe they would be restrictive, time consuming and of little value. 6) Where do you see the main area of interface in the future? a. prevention: refining screening instruments and decision tree algorithms to improve patient care, b. health maintenance: collaboration on chronic conditions with both somatic and psychiatric issues, c. complicated or resistant cases: referral relationship, d. no area of interface. Table 1 summarizes the responses to the specific questions.

Results

Chi square analyses were performed to determine if there were differences in the responses chosen for psychiatrists vs. PCPs (see Table 1). For each of Questions 1, 2, 3, and 5, a two-way chi square test was conducted (i.e., type of subject [psychiatrist vs.PCPs] by multiple choices available). Significant chi square values were obtained for Questions 1, 2, and 5. For Questions 4 and 6, a relatively high proportion of participants endorsed more than one choice per question. Conducting a single chi square on all of the multiple choices within a question would violate the assumption of independence, and therefore, a separate chi square analysis was performed for each choice. Two of the eight comparisons were statistically significant. Overall then, statistically significant differences were found between psychiatrists and PCPs on 5 of the 6 questions (1, 2, 5, and parts of 4 and 6). Question three which dealt with rating communication between the two groups found that both groups felt communication is of excellent or moderate quality with a small minority rating the communication as poor.

From the first question a difference was found in the quantitative degree to which the two groups described their level of interaction ($p<.04$). Psychiatrists chose the option denoting one time per week nearly 70% of the time versus only 23% of the PCPs interacting with psychiatrists this frequently. Nearly 40% of the PCPs interacted on a "several times per year" basis compared to just over 20% of the psychiatrists. The second question revealed that PCPs felt comfortable dealing with nearly 85% of their patients' psychiatric problems while 60% of the psychiatrists chose either few or none as describing their comfort dealing with their patients' medical problems ($p<.04$). Question 4 pointed out that significantly more PCPs (50%) considered unavailability as an impediment to communication as compared to psychiatrists (17.2%, $p<.04$). Psychiatrists were most likely to see time constraints as a barrier to interaction (65.5%). In the "other" option, psychiatrists pointed to "managed care," "lack of interest and education," and "lack of their own group's focus on presenting specific information to primary care doctors" as reasons for communication problems. PCPs wrote of deficiencies in the quality or quantity of consultation reports as impediments to communication with psychiatrists. The fifth question showed that PCPs were more likely (53.9%) to see the role of screening instruments and algorithms as helpful and felt that they would use them often ($p=.05$). Psychiatrists (75.5%) chose the option that described the tools as "limited in value but helpful to interspecialty management." On the last question a significant difference was found between the two groups with psychiatrists (78.6%) foreseeing the interface between the two groups as focusing mainly on the area of health maintenance (collaboration with PCPs on cases with somatic and psychiatric issues, $p<.04$). PCPs (46.2%) chose that option only as often as they chose the other options on prevention or referral. No responding provider thought that there would be "no area of interface" between the two groups in the future.

Discussion

This study suggests clear-cut, if preliminary differences between psychiatrists and PCPs regarding their attitudes towards areas of interface.

Regarding the first aim of this study, in contrast to urgings for psychiatrists to incorporate more primary care duties into their field,[5] the results of this survey would indicate that psychiatrists feel uncomfortable in dealing with most of their patients' medical problems. The boundaries of psychiatrists' roles have been reviewed by other authors[8] and a call has been made for both additional primary care duties in psychiatry[5] and more subspecialization of existing psychiatric disciplines.[8] Other reviews that see the role of psychiatry more appropriately focused on consultative care[9] are more consistent with the attitudes of the psychiatrists responding to this survey. Integration of primary care into psychiatry, based on these results, will more reasonably be attained by further exploration of innovative training programs for a subgroup of primary care psychiatrists as outlined by other authors,[6] rather than imposing primary care duties on practicing psychiatrists.

Though psychiatrists may be uncomfortable with the trend to generalize, PCPs in this survey, on the other hand, seem comfortable with this imposed development. This finding should be contrasted with the inadequate record for diagnosis and management of mental disorders such as depression and anxiety in primary care settings.[10] Although political or economic pressures may outline boundary crossings for each group, our study points out that these initiatives may or may not reflect practitioners' comfort levels.

Concerning the study's second aim, both groups agreed that the quality of communication between them was moderate to excellent. PCPs however, were not satisfied by the amount of communication with psychiatrists, describing them as unavailable. Psychiatrists blamed "time constraints" as an impediment to expedient communication. These findings suggest that if communication between the two groups is to be improved in the future, strategies for more

Table 1—. Frequencies, Percents, 95% Confidence Intervals, and Statistical Test Results on an Attitude Questionnaire on Interfacing and Collaboration Between Psychiatrists and Primary Care Physicians

Survey Questions and Choices	Psychiatrists Freq.	Psychiatrists Percent	Psychiatrists Confidence Interval	Primary Care Physicians Freq.	Primary Care Physicians Percent	Primary Care Physicians Confidence Interval
1. Approximately how often do you interact (collaboratively or in consultation) with [Primary Care Physicians / Psychiatrists]?						
a. One time per week	19	67.9%	49.3-82.1%	3	23.1%	8.2-50.3%
b. One time per month	2	7.1%	2.0-22.6%	2	15.4%	4.3-42.2%
c. Several times per year	6	21.4%	10.2-39.5%	5	38.5%	17.7-64.5%
d. Almost never	1	3.6%	0.6-17.7%	3	23.1%	8.2-50.3%
[x^2= 8.4; df = 3; p < .04]						
2. What proportion of your patient's [medical / psychiatric] problems do you feel comfortable dealing with?						
a. all	1	3.6%	0.6-17.7%	0	0.0%	0.0-22.8%
b. most	10	35.7%	20.7-54.2%	11	84.6%	57.8-95.7%
c. few	14	50.0%	32.6-67.4%	2	15.4%	4.3-42.2%
d. none	3	10.7%	3.7-27.2%	0	0.0%	0.0-22.8%
[x^2 = 8.7; df = 3; p < .04]						
3. At this time how would you characterize your communication with [Primary Care Physicians / Psychiatrists]?						
a. excellent/very helpful to patient management	16	57.1%	39.1-73.5%	5	38.5%	17.7-64.5%
b. moderate/of some limited value	11	39.3%	23.6-57.6%	6	46.2%	23.2-70.9%
c. poor/of little to no value	1	3.6%	0.6-17.7%	2	15.4%	4.3-42.2%
[x^2 = 2.4; df = 2; ns]						
4. In your view, difficulties in communicating with [Primary Care Physicians / Psychiatrists] result from:						
a. time constraints [x^2 = 2.0; df = 1; ns]	19	65.5%	47.3-80.1%	5	41.7%	19.3-68.0%
b. unavailability [x^2 = 4.6; df = 1; p < .04]	5	17.2%	7.6-34.5%	6	50.0%	25.4-74.6%
c. variation in overall approach to patient [x^2 = 1.8; df = 1; ns]	4	13.8%	5.5-30.6%	0	0.0%	0.0-24.3%
d. lack of overlap in areas of professional emphasis [x^2 = 0.1; df = 1; ns]	4	13.8%	5.5-30.6%	2	16.7%	4.7-44.8%
e. other [x^2 = 0.2; df = 1; ns]	4	13.8%	5.5-30.6%	1	8.3%	1.5-35.4%
5. If screening guidelines or decision tree algorithms were developed for mental illness diagnosis and treatment how would you describe your attitude?						
a. would welcome their development and use them often	5	17.9%	7.9-35.6%	7	53.9%	29.1-76.8%
b. envision their role as limited but useful to aid interspecialty management	21	75.0%	56.6-87.3%	6	46.2%	23.2-70.9%
c. believe they would be restrictive, time consuming and of little value [x^2 = 6.0; df = 2; p = .05]	2	7.1%	2.0-22.6%	0	0.0%	0.0-22.8%
6. Where do you see the main area of interface between Primary Care and Psychiatry in the future?						
a. prevention: refining screeening instruments and decision tree algorithms to improve patient outcomes [x^2 = 2.6; df = 1; ns]	6	21.4%	10.2-39.5%	6	46.2%	23.2-70.9%
b. health maintenance: collaboration on chronic conditions with both somatic and psychiatric issues [x^2 = 4.3; df = 1; p<.04]	22	78.6%	60.5-89.8%	6	46.2%	23.2-70.9%
c. complicated or resistant cases: referral relationship [x^2 = 0.2; df = 1; ns]	13	46.4%	29.5-64.2%	7	53.9%	29.1-76.8%
d. no area of interface [x^2 = na]	0	0.0%	0.0-12.1%	0	0.0%	0.0-22.8%

Note: The sum of the percentages per group for Questions 4 and 6 are greater than 100% because some subjects selected more than one choice.
ns = not signiticant.
na = not applicable.
n = 28 for psychiatrists, except for Question 4 where n = 29.
n = 13 for primary care physicians, except for Question 4 where n = 12.

efficient interaction such as the multifaceted collaboration model used for depression[11] should receive further study.

Our studies last aim on the future of interfacing addressed the problem of missed and mistreated psychiatric illness in primary care. There has been support for the use of screening instruments and treatment algorithms in primary care setting.[10] This survey shows that psychiatrists are less enthusiastic about their development and use than are primary care doctors. Traditional differences in interview style (rapid "checklist" screening in primary care versus comprehensive interviewing in psychiatry) may underlie this difference in attitudes. Psychiatrists have traditionally embraced the role of teacher and consultant of mental health issues to PCPs.[12] Being out-of-step with PCPs' needs and expectations would surely limit psychiatrists' ability to act in this capacity.

The results of this study are, of course, limited by the small sample size, the low rate of response to the survey, especially byPCPs, and the selected sample of participants at a conference on the pharmacotherapy of depression. In addition the construction of the survey instrument is weakened by the bias in question and answer choice inherent in a psychiatrist being the author. The questions were based on issues and findings still being studied in recent literature.[6,14,15,16] The focus of inquiries was meant to clarify the nature of interactions between psychiatrists and primary care physicians and how their attitudes, expectations and methods of communication (standardized instruments such as screening tools or algorithms as one example) can effect service delivery. In construction of any future survey to a wider audience, input from primary care physicians to refine the question and answer choices would be helpful. The attitudes expressed by the physicians at this conference may not be representative of the groups of psychiatrists or PCPs on the whole. There is however existing data that supports our finding that PCPs feel comfortable with the management of mental illness as part of their scope of practice.[13] In future surveys of practitioners on this topic, fruitful areas of pursuit might include: commonly seen diagnoses that each group feels comfortable or uncomfortable managing, perceived practical models of collaboration given existing time constraints and specific information about how and how often screening instruments and/or algorithms are being used.

A calling can be heard in these findings for psychiatrists to be more vocal about their practice preferences, continue to work towards more effective communication with our colleagues in primary care and become more involved in the development of mental health treatments provided by other practitioners. If we can generalize at all from the above, it is imperative that the differing attitudes be studied further, in light of the changing roles and expectations that lie ahead for each group. The information gained from these pursuits will hopefully help bring about a smooth transition at the interface of psychiatry and primary care without compromising patient care or practitioner job satisfaction.

Acknowledgements

Earl Hishinuma and the Native Hawaiian Research Project

References

1. Banazak DA: Late-Life Depression in Primary Care. J Gen Intern Med 1996; 11:163-167
2. Wulsin LR: An Agenda for Primary Care Psychiatry. Psychosomatics 1996;37:93-99
3. Pincus HA, Strain JJ, Houpt MD: Models of Mental Health Training in Primary Care. JAMA 1983; 249,22:3065-3068
4. Oxman TE: Geriatric Psychiatry at the Interface of Consultation-Liaison Psychiatry and Primary Care. Int'l J. Psychiatry in Medicine 1996;26:145-153
5. Shore JH: Psychiatry at a Crossroad: Our Role in Primary Care. Am J Psychiatry 1996;153, 11: 1398-1403
6. Silberman EK: Should We Train Psychiatrists as Primary Care Providers?. Psychosomatics 1999;40(2):126-128
7. Gottlieb JF, Olfson M: Current Referral Practices of Mental Health Care Providers. Hospital and Community Psychiatry 1987;38,11:1171-1181
8. Leiberman JA, Rush AJ: Redefining the Role of Psychiatry in Medicine. Am J Psych 1996;153,11:1388-1397
9. Detre T, McDonald M: Managed care and the future of psychiatry. Arch Gen Psychiatry 1997:54:201-204
10. Hales RE, Hilty DA, Wise MG: A Treatment Algorithm for the Management of Anxiety in Primay Care Practice. J Clin Psychiatry 1997;58,suppl. 3:76-80
11. Katon W, Von Korff M, Lin E, Walker E, Simon GE, Bush T, Robinson P, Russo J: Collaborative Management to Achieve Treatment Guidelines: Impact on Depression in Primary Care. JAMA 1995;273(13):1026-1031
12. Goldberg RL, Haas MR., Eaton JS: Psychiatry and the Primary Care Physician. JAMA 1976;236,8:944-945
13. Turton P, Tylee A, Kerry S: Mental health training needs in general practice. Prim Care Psychiatry 1995:1:197-199
14. Spitzer RL, Kroenke K, William JBW: Validation and Utility of a Self-Report Version of the PRIME-MD. JAMA, 1999;282,18:1737-1744.
15. Carney CP, Yates WR, Goerdt CJ, Doebbeling BN: Psychiatrists' and Internists' Knowledge and Attitudes about Delivery of Clinical Preventative Medical Services. Psych Serv, 1998;49,12:1594-1600.
16. Katon W, Von Korff M, Lin E, Simon G, Walker E, Unutzer J, Bush T, Russo J, Ludman E. Arch Gen Psych, 1999;56:1109-1115.

Everyone knows someone with diabetes.



14 million reasons to find a cure.

American Diabetes Association®

Until there's a cure, there's the American Diabetes Association.

Index to Hawaii Medical Journal Volume 59, 2000

Compiled by Carolyn S.H. Ching and Judith A. Kearney of the Hawaii Medical Library

Keyword Index

ADVANCE DIRECTIVES. End of life preferences in Hawaii, 59(12):440
AGED. Postural hypertension in elderly men - the Honolulu Heart Program, 59(2):48
— Use of donepezil in elderly patients with Alzheimer's disease - a Hawaii based study, 59(2):57
ALCOHOL DRINKING. Alcohol use in Hawaii, 59(8):329
ALGORITHMS. Algorithms for the treatment of acute DVT, 59(4)147
ALZHEIMER DISEASE. Use of donepezil in elderly patients with Alzheimer's disease - a Hawaii based study, 59(2):57
ANALGESICS. Invasive techniques utilized in chronic pain management, 59(3):96
— Pain management: a synopsis, 59(3):99
ANGIOPLASTY. Venous angioplasty and stenting, 59(4):145
ANGIOSCOPY. The role of angioscopic valve repair for primary valve incompetence (PVI), 59(6):266
ANTI-INFLAMMATORY AGENTS, STEROIDAL. Dexamethasone use in adult meningococcal meningitis, 59(7):308
ANTIBIOTICS, MACROLIDE. Angioimmunoblastic T-cell lymphoma (AIL-TCL) following macrolide administration, 59(2):44
ANTIDEPRESSIVE AGENTS. The relationship between type of antidepressant and neurovegetative symptoms in adult unipolar nonpsychotic depression: an opinion survey, 59(10):389
ANXIETY. Healing touch, 59(3):94
AREA HEALTH EDUCATION CENTERS. The role of AHEC in medical education [Medical school hotline], 59(11):404
ATTITUDE OF HEALTH PERSONNEL. Attitudes of organ donation among Hawaii physicians, 59(11):407
— Differing attitudes between psychiatrists and primary care providers at the interface, 59(12):447
ATTITUDE TO DEATH. End of life preferences in Hawaii, 59(12):440
AZITHROMYCIN. Angioimmunoblastic T-cell lymphoma (AIL-TCL) following macrolide administration, 59(2):44
BALLOON DILATATION. Angioplasty and stenting of the obstructed iliac vein, 59(6):276
BANDAGES. Deep vein thrombosis in airline passengers - the incidence of deep vein thrombosis and the efficacy of elastic compression stockings, 59(4):162
— Mechanism of action of compression therapy for venous ulceration, 59(5):192
BIPOLAR DISORDER. Evaluation of late onset bipolar illness during menopause, 59(2):51
BOOK REVIEWS. Book review and commentary: Digital doctors by Marshall de Graffenreid Ruffin, Jr. [eDocs], 59(1):8
— Handbook of pain management [Book review], 59(3):85
CANCER RESEARCH CENTER OF HAWAII. The Cancer Research Center of Hawaii, University of Hawaii, 59(12):438
CANNABIS. Hawaii State Legislature - ACT 228, Medical Marijuana Law, 59(9):351
CATHETERIZATION, PERIPHERAL. Catheter-directed thrombolysis for symptomatic lower extremity deep vein thrombosis, 59(4):141
CELL CYCLE. The cell cycle, 59(7):300
CHILD. Diarrhea-associated hospitalizations among children in Hawaii, 59(9):362
CHOLINESTERASE INHIBITORS. Use of donepezil in elderly patients with Alzheimer's disease - a Hawaii based study, 59(2):57
CLASSIFICATION. An evaluation in Europe of the C of CEAP, 59(5):202
CLINICAL COMPETENCE. Clinical skills training at John A. Burns School of Medicine (JABSOM): teaching and learning the art, craft and science of clinical practice [Medical school hotline], 59(2):40
COCCIDIOIDOMYCOSIS. Unusual presentation of pulmonary coccidioidomycosis in a traveler [Case of the month], 59(6):238
COMMUNITY HEALTH SERVICES. Learning to implement the medical home in communities, 59(1):15
COMPUTER-ASSISTED INSTRUCTION. Technology-based delivery of PBL curricular elements at JABSOM [Medical school hotline], 59(6):240
CONGRESSES. 143rd HMA annual meeting, October 1999, Hilton Waikoloa, Big Island, 59(1):22
— Clinical topics: highlights of the HMA Scientific Session, 59(1):23
— Scenes from the 1999 HMA Meeting, Hilton Waikoloa, October 1999, 59(1):26
— Third Pacific Vascular Symposium on Venous Disease, November 2-6, 1999 [Program], 59(4):121
— Scenes from the Third Pacific Vascular Symposium [Photos], 59(4):123
— Faculty, 59(4):124
— Third Pacific Vascular Symposium on Venous Diseases, November 2-6, 1999 [Program], 59(5):187
— Faculty, 59(5):189
— Photos, 59(5):188
— Third Pacific Vascular Symposium on Venous Disease, November 2-6, 1999 [Program], 59(6):242
— Faculty, 59(6):244
— Highlights of the HMA Scientific Session, 59(12):435
CORONARY ARTERY BYPASS. Coronary artery bypass grafting performed with or without a bypass pump: early results, 59(2):54
COVER ILLUSTRATIONS. Paniolo, 59(1):3
— Hula, 59(2):39
— Pele, Hi'iaka and Lohiau, 59(3):83
— Iolani Barracks, 59(4):115
— Royal Hawaiian Hotel, 59(5):179
— Moana Hotel, 59(6):235
— BB 63 USS Missouri, 59(7):291
— Old plantation, 59(8):319
— Honolulu Academy of Arts, 59(9):347
— Bishop Museum, 59(10):375
— Iolani Palace, 59(11):403
— Bishop Planetarium, 59(12):431
CROSS-CULTURAL COMPARISON. Alcohol use in Hawaii, 59(8):329
DELIVERY OF HEALTH CARE. Special presentation to the State Legislature: Hawaii Coalition for Health, December 8, 1999, 59(2):62
DENTAL HYGIENISTS. Health education needs in Hawaii: social work, dental hygiene and nursing, 59(2):67
DEPRESSIVE DISORDER. The relationship between type of antidepressant and neurovegetative symptoms in adult unipolar nonpsychotic depression: an opinion survey, 59(10):389
DEXAMETHASONE. Dexamethasone use in adult meningococcal meningitis, 59(7):308
DIABETES MELLITUS. A review of the United Kingdom Prospective Diabetes Study (UKPDS) and a discussion of the implications for patient care, 59(7):295
DIAGNOSIS. Controversies in diagnosis - clinical evaluation in the office, 59(5):199
— Reliability of clinical diagnosis in varicose veins: a prospective comparison between clinical examination and Duplex ultrasound, 59(5):205
DIARRHEA. Diarrhea-associated hospitalizations among children in Hawaii, 59(9):362
DIRECTORY. Pain resources for the Hawaii practitioner, 59(3):101
— Faculty, 59(4):124
— Faculty, 59(6):244
DRUG THERAPY. A review of the United Kingdom Prospective Diabetes Study (UKPDS) and a discussion of the implications for patient care, 59(7):295
EDITORIALS. Peer review [Editorial], 59(1):4
— Chronic hepatitis C caused by a virus—fiction or for real? A response to an article published in the ABC News website [Special contribution], 59(1):5
— Special issue: American College of Physicians - American Society of Internal Medicine Hawaii Chapter [Editorial], 59(2):40
— Editorial, 59(3):84
— Pain as a paradigm [Special commentary], 59(3):85

— patient's need to control his pain. 1999 [classical article], 59(3):90
— Pacific Vascular Symposium on Venous Disease [Editorial], 59(4):116
— Guest editorial, 59(4):116
— Pacific Vascular Symposium on Venous Disease - part II [Editorial], 59(5):180
— Guest editorial, 59(5):180
— Pacific Vascular Symposium on Venous Disease - part III [Editorial], 59(6):236
— Guest editorial, 59(6):236
— Resumption of individual manuscripts [Editorial], 59(7):292
— Editorial, 59(8):320
— Editorial, 59(9):348
— Report to the Hawaii Medical Association annual meeting [Editorial], 59(10):376
—journal is alive and well [Editorial], 59(11):404
— Editorials, 59(12):432
EDUCATION, MEDICAL. Clinical skills training at John A. Burns School of Medicine (JABSOM): teaching and learning the art, craft and science of clinical practice [Medical school hotline], 59(2):40
— The role of the new cell and molecular biology graduate program in medical education [Medical school hotline], 59(3):87
— Genetics in the John A. Burns School of Medicine Curriculum: a nationally recognized need and an opportunity for curricular integration [Medical school hotline], 59(4):117
—Encoding specificity and problem-based learning (PBL) [Medical school hotline], 59(5):184
— role of family practice in medical school education [Medical school hotline], 59(7):292
EDUCATION, PROFESSIONAL. Health education needs in Hawaii: social work, dental hygiene and nursing, 59(2):67
EHRLICHIOSIS. Ehrlichiosis . . . in Hawaii? An unusual presentation [Case of the month], 59(5):182
ENDOSCOPY. Controversies in the treatment of venous ulcers: SEPSing?, 59(5):193
— Case of perforator incompetence - making SEPS better, 59(6):256
EPIDEMIOLOGY. Epidemiology of neural tube defects, Hawaii, 1986-1997, 59(8):323
— Alcohol use in Hawaii, 59(8):329
— Diarrhea-associated hospitalizations among children in Hawaii, 59(9):362
ESCHERICHIA COLI INFECTIONS. Emphysematous pyelonephritis, 59(8):336
ETHICS, MEDICAL. The first non-heart-beating organ donor in Hawaii - medical and ethical considerations, 59(9):353
FAMILY PRACTICE. The role of family practice in medical school education [Medical school hotline], 59(7):292
GENETICS. Genetics in the John A. Burns School of Medicine Curriculum: a nationally recognized need and an opportunity for curricular integration [Medical school hotline], 59(4):117
HAWAII. Hawaii State Legislature - ACT 228, Medical Marijuana Law, 59(9):351
HAWAII COALITION FOR HEALTH. Special presentation to the State Legislature: Hawaii Coalition for Health, December 8, 1999, 59(2):62
HAWAII MEDICAL ASSOCIATION. 143rd HMA annual meeting, October 1999, Hilton Waikoloa, Big Island, 59(1):22
— Clinical topics: highlights of the HMA Scientific Session, 59(1):23
— Scenes from the 1999 HMA Meeting, Hilton Waikoloa, October 1999, 59(1):26
— Highlights of the HMA Scientific Session, 59(12):435
HAWAII MEDICAL JOURNAL. Report to the Hawaii Medical Association annual meeting [Editorial], 59(10):376
—journal is alive and well [Editorial], 59(11):404
— Editorials, 59(12):432
— Index to the Hawaii Medical Journal, volume 59, 2000, 59(12):451
HAWAII MEDICAL SERVICES ASSOCIATION. Special presentation to the State Legislature: Hawaii Coalition for Health, December 8, 1999, 59(2):62
— Why we need laws to protect patients from their health plan, 59(2):69
HEALTH CARE SECTOR. Special presentation to the State Legislature: Hawaii Coalition for Health, December 8, 1999, 59(2):62
HEPARIN. Heparin and low-molecular weight heparin therapy for venous thromboembolism—will unfractionated heparin survive?, 59(4):132
HEPATITIS C, CHRONIC. Chronic hepatitis C caused by a virus—fiction or for real? A response to an article published in the ABC News website [Special contribution], 59(1):5
HEPATITIS C-LIKE VIRUSES. Chronic hepatitis C caused by a virus—fiction or for real? A response to an article published in the ABC News website [Special contribution], 59(1):5
HONOLULU HEART PROGRAM. Postural hypertension in elderly men - the Honolulu Heart Program, 59(2):48
HOSPICE CARE. Pain management and palliative care in hospice, 59(3):92
— End of life preferences in Hawaii, 59(12):440
HOSPITALIZATION. Diarrhea-associated hospitalizations among children in Hawaii, 59(9):362
HYPERTENSION. Postural hypertension in elderly men - the Honolulu Heart Program, 59(2):48
— review of the United Kingdom Prospective Diabetes Study (UKPDS) and a discussion of the implications for patient care, 59(7):295
ILIAC VEIN. Angioplasty and stenting of the obstructed iliac vein, 59(6):276
IMMUNOBLASTIC LYMPHADENOPATHY. Angioimmunoblastic T-cell lymphoma (AIL-TCL) following macrolide administration, 59(2):44
IN MEMORIAM. In memoriam, 59(8):321
INCIDENCE. The correlation between cancer incidence and kava consumption, 59(11):420
INDANS. Use of donepezil in elderly patients with Alzheimer's disease - a Hawaii based study, 59(2):57
INDEX. Index to the Hawaii Medical Journal, volume 59, 2000, 59(12):451
INFLAMMATION. The scientific evidence for early removal of the thrombus to improve outcome, 59(4):126
INFORMED CONSENT. Malpractice risk assessment among different approaches for informed consent, 59(9):357
INSURANCE, HEALTH. Special presentation to the State Legislature: Hawaii Coalition for Health, December 8, 1999, 59(2):62
— Why we need laws to protect patients from their health plan, 59(2):69
INTERNSHIP AND RESIDENCY. Learning to implement the medical home in communities, 59(1):15
INTERPROFESSIONAL RELATIONS. Differing attitudes between psychiatrists and primary care providers at the interface, 59(12):447
JAPANESE. Postural hypertension in elderly men - the Honolulu Heart Program, 59(2):48
JOHN A BURNS SCHOOL OF MEDICINE. Vision for the John A. Burns School of Medicine (JABSOM) [Medical school hotline], 59(1):6
—Clinical skills training at John A. Burns School of Medicine (JABSOM): teaching and learning the art, craft and science of clinical practice [Medical school hotline], 59(2):40
— role of the new cell and molecular biology graduate program in medical education [Medical school hotline], 59(3):87
— Genetics in the John A. Burns School of Medicine Curriculum: a nationally recognized need and an opportunity for curricular integration [Medical school hotline], 59(4):117
—Encoding specificity and problem-based learning (PBL) [Medical school hotline], 59(5):184
—Technology-based delivery of PBL curricular elements at JABSOM [Medical school hotline], 59(6):240
— role of family practice in medical school education [Medical school hotline], 59(7):292
— Department of Public Health Sciences and Epidemiology (DPHSE) [Medical school hotline], 59(8):321
— Student profile: Class of 2004, John A. Burns School of Medicine (JABSOM) [Medical school hotline], 59(9):349
KAVA. The correlation between cancer incidence and kava consumption, 59(11):420
LEGISLATION, DRUG. Hawaii State Legislature - ACT 228, Medical Marijuana Law, 59(9):351
LETTERS TO THE EDITOR. [re: article about John M. Zelko MD], 59(1):7
— [re: Special Hawaii Medical Journal issue for Thomas Whelan, Jr., MD], 59(5):183
— [re: Physicians' greatest enemy - complacency], 59(8):320
LIABILITY, LEGAL. Malpractice risk assessment among different approaches for informed consent, 59(9):357
LUNG DISEASES, FUNGAL. Unusual presentation of pulmonary coccidioidomycosis in a traveler [Case of the month], 59(6):238
LYMPHOMA, T-CELL. Angioimmunoblastic T-cell lymphoma (AIL-TCL) following macrolide administration, 59(2):44
MANAGED CARE PROGRAMS. Universal single payer health plan — answer to our dilemma?, 59(2):70
MCCASLIN, LEE. In memoriam, 59(8):321
MEDICAID. An update of Hawaii's QUEST medical plans' performance, using HEDIS measures, 1997-1998, 59(11):411
MEDICAL ASSISTANCE. Universal single payer health plan — answer to our dilemma?, 59(2):70
MEDICAL INFORMATICS. Book review and commentary: Digital doctors by Marshall de Graffenreid Ruffin, Jr. [eDocs], 59(1):8
MEDICAL ONCOLOGY. The Cancer Research Center of Hawaii, University of Hawaii, 59(12):438
MENINGITIS, MENINGOCOCCAL. Dexam-

ethasone use in adult meningococcal meningitis, 59(7):308
MENOPAUSE. Evaluation of late onset bipolar illness during menopause, 59(2):51
MOLECULAR BIOLOGY. The role of the new cell and molecular biology graduate program in medical education [Medical school hotline], 59(3):87
NEOPLASM REGRESSION, SPONTANEOUS. Complete spontaneous regression of cancer: four case reports, review of literature, and discussion of possible mechanisms involved, 59(10):379
NEOPLASMS. correlation between cancer incidence and kava consumption, 59(11):420
NEURAL TUBE DEFECTS. Epidemiology of neural tube defects, Hawaii, 1986-1997, 59(8):323
NURSES. Health education needs in Hawaii: social work, dental hygiene and nursing, 59(2):67
ORGAN TRANSPLANTATION. The first non-heart-beating organ donor in Hawaii - medical and ethical considerations, 59(9):353
PACIFIC VASCULAR SYMPOSIUM (3RD : 1999 : KOHALA COAST, HAWAII). Third Pacific Vascular Symposium on Venous Disease, November 2-6, 1999 [Program], 59(4):121
— Scenes from the Third Pacific Vascular Symposium [Photos], 59(4):123
— Faculty, 59(4):124
— Guest editorial, 59(5):180
— Third Pacific Vascular Symposium on Venous Diseases, November 2-6, 1999, [Program], 59(5):187
— Faculty, 59(5):189
— Photos, 59(5):188
— Guest editorial, 59(6):236
— Third Pacific Vascular Symposium on Venous Disease, November 2-6, 1999 [Program], 59(6):242
— Faculty, 59(6):244
PAIN. Pain as a paradigm [Special commentary], 59(3):85
— Handbook of pain management [Book review], 59(3):85
— patient's need to control his pain. 1999 [classical article], 59(3):90
— plan to improve pain management for dying patients, 59(3):91
— Pain management and palliative care in hospice, 59(3):92
— Healing touch, 59(3):94
— Invasive techniques utilized in chronic pain management, 59(3):96
— Pain management: a synopsis, 59(3):99
— Pain resources for the Hawaii practitioner, 59(3):101
— Pain glossary, 59(3):103
PALLIATIVE CARE. Pain management and palliative care in hospice, 59(3):92
PATIENT ADVOCACY. Why we need laws to protect patients from their health plan, 59(2):69
— patient's need to control his pain. 1999 [classical article], 59(3):90
PEDIATRICS. Learning to implement the medical home in communities, 59(1):15
PHLEBOGRAPHY. Invasive procedures: descending venogram, 59(5):211
PHYSICIAN IMPAIRMENT. Healing thyself: medical professionals who face up to addictions. 2000 [classical article], 59(12):432
PHYSICIAN'S ROLE. Learning to implement the medical home in communities, 59(1):15
PHYSICIANS. Attitudes of organ donation among Hawaii physicians, 59(11):407
PIPERIDINES. Use of donepezil in elderly patients with Alzheimer's disease - a Hawaii based study, 59(2):57
PLETHYSMOGRAPHY. Observations on air plethysmography, 59(5):208
POETRY. Poems, 59(12):437
PORTRAITS. Scenes from the 1999 HMA Meeting, Hilton Waikoloa, October 1999, 59(1):26
— Scenes from the Third Pacific Vascular Symposium [Photos], 59(4):123
— Photos, 59(5):188
POSTURE. Postural hypertension in elderly men - the Honolulu Heart Program, 59(2):48
PRACTICE PATTERNS. Differing attitudes between psychiatrists and primary care providers at the interface, 59(12):447
PREVALENCE. Postural hypertension in elderly men - the Honolulu Heart Program, 59(2):48
— Epidemiology of neural tube defects, Hawaii, 1986-1997, 59(8):323
PRIMARY HEALTH CARE. Differing attitudes between psychiatrists and primary care providers at the interface, 59(12):447
PROBLEM-BASED LEARNING. Encoding specificity and problem-based learning (PBL) [Medical school hotline], 59(5):184
— Technology-based delivery of PBL curricular elements at JABSOM [Medical school hotline], 59(6):240
PROGRAM EVALUATION. An update of Hawaii's QUEST medical plans' performance, using HEDIS measures, 1997-1998, 59(11):411
PSYCHIATRY. Differing attitudes between psychiatrists and primary care providers at the interface, 59(12):447
PUBLIC HEALTH. The Department of Public Health Sciences and Epidemiology (DPHSE) [Medical school hotline], 59(8):321
PYELONEPHRITIS. Emphysematous pyelonephritis, 59(8):336
QUALITY OF HEALTH CARE. An update of Hawaii's QUEST medical plans' performance, using HEDIS measures, 1997-1998, 59(11):411
QUEST PROGRAM (HAWAII). An update of Hawaii's QUEST medical plans' performance, using HEDIS measures, 1997-1998, 59(11):411
RECURRENCE. Recurrent varices after surgery (REVAS), 59(5):214
RESEARCH. Special presentation to the State Legislature: Hawaii Coalition for Health, December 8, 1999, 59(2):62
— Cancer Research Center of Hawaii, University of Hawaii, 59(12):438
RISK ASSESSMENT. Malpractice risk assessment among different approaches for informed consent, 59(9):357
SAPHENOUS VEIN. Saving the saphenous vein, 59(6):247
— venous ulcer, 59(6):258
SCHOOLS, MEDICAL. Vision for the John A. Burns School of Medicine (JABSOM) [Medical school hotline], 59(1):6
— Special presentation to the State Legislature: Hawaii Coalition for Health, December 8, 1999, 59(2):62
SCLEROTHERAPY. Ambulatory venous surgery versus sclerotherapy, 59(6):248
— Ultrasound guided sclerotherapy (USGS) for perforating veins (PV), 59(6):261
SENSATION. Sensory impairment: a feature of chronic venous insufficiency, 59(5):203
SINGLE-PAYER SYSTEM. Universal single payer health plan — answer to our dilemma?, 59(2):70
SOCIAL WORK. Health education needs in Hawaii: social work, dental hygiene and nursing, 59(2):67
SOCIETIES, MEDICAL. 143rd HMA annual meeting, October 1999, Hilton Waikoloa, Big Island, 59(1):22
STENTS. Venous angioplasty and stenting, 59(4):145
— Angioplasty and stenting of the obstructed iliac vein, 59(6):276
STRAUB FOUNDATION. Pacific Vascular Symposium on Venous Disease - part II [Editorial], 59(5):180
STUDENTS, MEDICAL. Student profile: Class of 2004, John A. Burns School of Medicine (JABSOM) [Medical school hotline], 59(9):349
SUBCLAVIAN VEIN. Could prolonged air travel be causally associated with subclavian vein thromboembolism?, 59(4):164
SUBSTANCE-RELATED DISORDERS. Healing thyself: medical professionals who face up to addictions. 2000 [classical article], 59(12):432
SUICIDE, ASSISTED. End of life preferences in Hawaii, 59(12):440
TERMINAL CARE. A plan to improve pain management for dying patients, 59(3):91
THERAPEUTIC TOUCH. Healing touch, 59(3):94
THERAPEUTICS. Handbook of pain management [Book review], 59(3):85
THERAPY. Case of secondary deep venous disease - something can always be done, 59(6):274
THROMBECTOMY. Selective thrombectomy for treatment of iliofemoral DVT, 59(4):145
THROMBOLYTIC THERAPY. The role of flow-directed thrombolytic therapy in the treatment of lower extremity thrombosis: evaluating and treating the entire limb, 59(4):132
— Heparin and low-molecular weight heparin therapy for venous thromboembolism—will unfractionated heparin survive?, 59(4):132
— Catheter-directed thrombolysis for symptomatic lower extremity deep vein thrombosis, 59(4):141
— Pharmaco-mechanical venous thrombolysis, 59(4):143
TIME FACTORS. A review of workers' compensation claims: the frequency of claim denial and medical treatment delay, 59(1):11
TISSUE DONORS. The first non-heart-beating organ donor in Hawaii - medical and ethical considerations, 59(9):353
— Attitudes of organ donation among Hawaii physicians, 59(11):407
TISSUE TRANSPLANTATION. Case of secondary deep venous disease - valve transplantation, 59(6):274
TRAVEL. Air travel-related venous thromboembolism: Hawaii views, London views, Vienna views, Sydney views, Chicago views, 59(4):153
— Traveller's venous thromboembolism, 59(4):160
— Risk factors for venous thromboembolism following prolonged air travel: a prospective study, 59(4):162
— Deep vein thrombosis in airline passengers -

the incidence of deep vein thrombosis and the efficacy of elastic compression stockings, 59(4):162
— Could prolonged air travel be causally associated with subclavian vein thromboembolism?, 59(4):164
— prospective evaluation of the risk for venous leg thrombosis associated with prolonged air travel: a pilot study, 59(4):167
TREATMENT OUTCOME. Venous outcomes assessment in chronic venous disease, 59(5):216
— review of the United Kingdom Prospective Diabetes Study (UKPDS) and a discussion of the implications for patient care, 59(7):295
ULTRASONOGRAPHY. The office - the hand-held Doppler, 59(5):200
— Reliability of clinical diagnosis in varicose veins: a prospective comparison between clinical examination and Duplex ultrasound, 59(5):205
— The vascular lab-duplex in reflux, 59(5):206
— Ultrasound guided sclerotherapy (USGS) for perforating veins (PV), 59(6):261
VARICOSE ULCER. My method of treatment changes the pathophysiology to heal the ulcer and prevent recurrence : drugs are the ultimate answer!, 59(5):191
— Mechanism of action of compression therapy for venous ulceration, 59(5):192
— Controversies in the treatment of venous ulcers: SEPSing?, 59(5):193
— Chronic venous ulcer: how correction of superficial reflux alters the pathophysiology, 59(5):196
— How my method of treatment changes the pathophysiology to heal the ulcer and prevent recurrence - reparing [sic] primary reflux, 59(5):197
— How my method of treatment changes the pathophysiology to heal the ulcer and prevent recurrence - repairing secondary incompetence, 59(5)198
— Controversies in diagnosis - clinical evaluation in the office, 59(5):199
— Diagnosis of venous ulcer - the St. Thomas way, 59(5):212
— Chronic venous ulcers, 59(6):246
— Case of superficial incompetence, 59(6):252
— The venous ulcer, 59(6):258
— Case of perforator incompetence, 59(6):262
— Case of primary venous reflux, 59(6):270
— Case of secondary deep venous disease, 59(6):278
VARICOSE VEINS. Reliability of clinical diagnosis in varicose veins: a prospective comparison between clinical examination and Duplex ultrasound, 59(5):205
— vascular lab-duplex in reflux, 59(5):206
— Recurrent varices after surgery (REVAS), 59(5):214
— New trends and operative techniques in the management of varicose veins, 59(6):249
— Ultrasound guided sclerotherapy (USGS) for perforating veins (PV), 59(6):261
VASCULAR DISEASES. Third Pacific Vascular Symposium on Venous Disease, November 2-6, 1999 [Program], 59(4):121
—Third Pacific Vascular Symposium on Venous Diseases, November 2-6, 1999 [Program], 59(5):187
— Quo vadis session, 59(5):218
—Third Pacific Vascular Symposium on Venous Disease, November 2-6, 1999 [Program], 59(6):242
VASCULAR SURGICAL PROCEDURES. Controversies in the treatment of venous ulcers: SEPSing?, 59(5):193
— International registry for reconstructive surgery in chronic venous disease, 59(5):217
— Valvuloplasty and primary venous insufficiency, 59(5):218
— Saving the saphenous vein, 59(6):247
— Ambulatory venous surgery versus sclerotherapy, 59(6):248
— New trends and operative techniques in the management of varicose veins, 59(6):249
— Case of superficial incompetence, 59(6):252
— Case of perforator incompetence - making SEPS better, 59(6):256
— Case of perforator incompetence, 59(6):262
— Internal valvuloplasty, 59(6):268
— Case of secondary deep venous disease, 59(6):278
VEINS. Can valves be preserved?, 59(4):128
— Quo vadis session, 59(5):218
VENOUS INSUFFICIENCY. The office - the hand-held Doppler, 59(5):200
— evaluation in Europe of the C of CEAP, 59(5):202
— Sensory impairment: a feature of chronic venous insufficiency, 59(5):203
— Evaluation of obstruction, 59(5):209
— Venous outcomes assessment in chronic venous disease, 59(5):216
— International registry for reconstructive surgery in chronic venous disease, 59(5):217
— Valvuloplasty and primary venous insufficiency, 59(5):218
— Saving the saphenous vein, 59(6):247
— Case of perforator incompetence - making SEPS better, 59(6):256
— Case of perforator incompetence, 59(6):262
— Treatment of primary venous insufficiency, 59(6):265
— role of angioscopic valve repair for primary valve incompetence (PVI), 59(6):266
— Internal valvuloplasty, 59(6):268
— Case of secondary deep venous disease - something can always be done, 59(6):274
— Case of secondary deep venous disease - valve transplantation, 59(6):274
VENOUS THROMBOSIS. The scientific evidence for early removal of the thrombus to improve outcome, 59(4):126
— Calf vein DVT : surveillance and treatment, 59(4):130
— Calf vein thrombosis: anticoagulation for all?, 59(4):131
— Heparin and low-molecular weight heparin therapy for venous thromboembolism—will unfractionated heparin survive?, 59(4):132
— Iliofemoral DVT - ambulatory treatment, 59(4):139
— Algorithms for the treatment of acute DVT, 59(4)147
— Air travel-related venous thromboembolism: Hawaii views, London views, Vienna views, Sydney views, Chicago views, 59(4):153
— Traveller's venous thromboembolism, 59(4):160
— Risk factors for venous thromboembolism following prolonged air travel: a prospective study, 59(4):162
— Deep vein thrombosis in airline passengers - the incidence of deep vein thrombosis and the efficacy of elastic compression stockings, 59(4):162
— Could prolonged air travel be causally associated with subclavian vein thromboembolism?, 59(4):164
— prospective evaluation of the risk for venous leg thrombosis associated with prolonged air travel: a pilot study, 59(4):167
— Evaluation of obstruction, 59(5):209
WHELAN, THOMAS, JR.. [re: Special Hawaii Medical Journal issue for Thomas Whelan, Jr., MD], 59(5):183
WORKERS' COMPENSATION. A review of workers' compensation claims: the frequency of claim denial and medical treatment delay, 59(1):11

Author Index

AHMED I. relationship between type of antidepressant and neurovegetative symptoms in adult unipolar nonpsychotic depression: an opinion survey, 59(10):389
ALAGIAKRISHNAN K. Postural hypertension in elderly men - the Honolulu Heart Program, 59(2):48
— Use of donepezil in elderly patients with Alzheimer's disease - a Hawaii based study, 59(2):57
AMPARO JM. review of workers' compensation claims: the frequency of claim denial and medical treatment delay, 59(1):11
ARAKAKI R. review of the United Kingdom Prospective Diabetes Study (UKPDS) and a discussion of the implications for patient care, 59(7):295
ARFVIDSSON B. Air travel-related venous thromboembolism: Hawaii views, London views, Vienna views, Sydney views, Chicago views, 59(4):153
— Risk factors for venous thromboembolism following prolonged air travel: a prospective study, 59(4):162
— prospective evaluation of the risk for venous leg thrombosis associated with prolonged air travel: a pilot study, 59(4):167
BAUMAN KA. role of family practice in medical school education [Medical school hotline], 59(7):292
BEDDOW R. review of the United Kingdom Prospective Diabetes Study (UKPDS) and a discussion of the implications for patient care, 59(7):295
BELCARO G. Saving the saphenous vein, 59(6):247
BERGAN JJ. Chronic venous ulcer: how correction of superficial reflux alters the pathophysiology, 59(5):196
BLANCHETTE P. Postural hypertension in elderly men - the Honolulu Heart Program, 59(2):48
BLANCHETTE PL. Use of donepezil in elderly patients with Alzheimer's disease - a Hawaii based study, 59(2):57
BOWLES BJ. Coronary artery bypass grafting performed with or without a bypass pump: early results, 59(2):54
BRAUN KL. End of life preferences in Hawaii, 59(12):440
BURNAND K. Air travel-related venous throm-

boembolism: Hawaii views, London views, Vienna views, Sydney views, Chicago views, 59(4):153
BURNAND KG. Diagnosis of venous ulcer - the St. Thomas way, 59(5):212
CADMAN EC. Vision for the John A. Burns School of Medicine (JABSOM) [Medical school hotline], 59(1):6
— Special presentation to the State Legislature: Hawaii Coalition for Health, December 8, 1999, 59(2):62
CANN RL. role of the new cell and molecular biology graduate program in medical education [Medical school hotline], 59(3):87
CAPRINI JA. Air travel-related venous thromboembolism: Hawaii views, London views, Vienna views, Sydney views, Chicago views, 59(4):153
CARPENTIER PH. evaluation in Europe of the C of CEAP, 59(5):202
CARROLL C. Attitudes of organ donation among Hawaii physicians, 59(11):407
CHANG WYM. Complete spontaneous regression of cancer: four case reports, review of literature, and discussion of possible mechanisms involved, 59(10):379
CHEUNG AHS. first non-heart-beating organ donor in Hawaii - medical and ethical considerations, 59(9):353
— Attitudes of organ donation among Hawaii physicians, 59(11):407
CHING CSH. Index to the Hawaii Medical Journal, volume 59, 2000, 59(12):451
COMEROTA AJ. Algorithms for the treatment of acute DVT, 59(4)147
CORDTS PR. Observations on air plethysmography, 59(5):208
— Case of perforator incompetence, 59(6):262
CORNU-THENARD A. evaluation in Europe of the C of CEAP, 59(5):202
CRAGG AH. Pharmaco-mechanical venous thrombolysis, 59(4):143
— Venous angioplasty and stenting, 59(4):145
CREAMER B. Healing thyself: medical professionals who face up to addictions. 2000 [classical article], 59(12):432
CURB JD. Postural hypertension in elderly men - the Honolulu Heart Program, 59(2):48
DALSING MC. Case of secondary deep venous disease - valve transplantation, 59(6):274
DANG CR. Coronary artery bypass grafting performed with or without a bypass pump: early results, 59(2):54
DARLING K. Learning to implement the medical home in communities, 59(1):15
DEPALMA RG. Case of perforator incompetence - making SEPS better, 59(6):256
DUBOW J. Air travel-related venous thromboembolism, Hawaii views, London views, Vienna views, Sydney views, Chicago views, 59(4):153
EFFLER PV. Diarrhea-associated hospitalizations among children in Hawaii, 59(9):362
EKLOF B. Guest editorial, 59(4):116
— Selective thrombectomy for treatment of iliofemoral DVT, 59(4):145
— Air travel-related venous thromboembolism: Hawaii views, London views, Vienna views, Sydney views, Chicago views, 59(4):153
— prospective evaluation of the risk for venous leg thrombosis associated with prolonged air travel: a pilot study, 59(4):167
— Guest editorial, 59(5):180
— Guest editorial, 59(6):236
— Case of superficial incompetence, 59(6):252
— Case of primary venous reflux, 59(6):270
ENRICI EA. venous ulcer, 59(6):258
FLOWERS RS. Poems, 59(12):437
FORRESTER MB. Epidemiology of neural tube defects, Hawaii, 1986-1997, 59(8):323
GLASS RI. Diarrhea-associated hospitalizations among children in Hawaii, 59(9):362
GLOVICZKI P. Controversies in the treatment of venous ulcers: SEPSing?, 59(5):193
GOLDSTEIN N. Peer review [Editorial], 59(1):4
— Special issue: American College of Physicians - American Society of Internal Medicine Hawaii Chapter [Editorial], 59(2):40
— Editorial, 59(3):84
— Pacific Vascular Symposium on Venous Disease [Editorial], 59(4):116
— Pacific Vascular Symposium on Venous Disease - part II [Editorial], 59(5):180
— Pacific Vascular Symposium on Venous Disease - part III [Editorial], 59(6):236
— Resumption of individual manuscripts [Editorial], 59(7):292
— Editorial, 59(8):320
— Editorial, 59(9):348
— Report to the Hawaii Medical Association annual meeting [Editorial], 59(10):376
— journal is alive and well [Editorial], 59(11):404
— Editorials, 59(12):432
GOVERNOR'S BLUE RIBBON PANEL ON LIVING AND DYING WITH DIGNITY, TASK FORCE ON PAIN MANAGEMENT IN THE DYING PATIENT, 1997. plan to improve pain management for dying patients, 59(3):91
GUEX JJ. Ultrasound guided sclerotherapy (USGS) for perforating veins (PV), 59(6):261
HARRIGAN RC. Health education needs in Hawaii: social work, dental hygiene and nursing, 59(2):67
HASHINUMA ES. Alcohol use in Hawaii, 59(8):329
HEIBY EM. relationship between type of antidepressant and neurovegetative symptoms in adult unipolar nonpsychotic depression: an opinion survey, 59(10):389
HMELNIKER SM. Valvuloplasty and primary venous insufficiency, 59(5):218
HOLM J. Reliability of clinical diagnosis in varicose veins: a prospective comparison between clinical examination and Duplex ultrasound, 59(5):205
HOLMAN RC. Diarrhea-associated hospitalizations among children in Hawaii, 59(9):362
HOLMES JA. relationship between type of antidepressant and neurovegetative symptoms in adult unipolar nonpsychotic depression: an opinion survey, 59(10):389
HONBO L. update of Hawaii's QUEST medical plans' performance, using HEDIS measures, 1997-1998, 59(11):411
HORIUCHI BY. End of life preferences in Hawaii, 59(12):440
HOSPENTHAL D. Unusual presentation of pulmonary coccidioidomycosis in a traveler [Case of the month], 59(6):238
HUI L. Dexamethasone use in adult meningococcal meningitis, 59(7):308
— Emphysematous pyelonephritis, 59(8):336
HULL RD. Heparin and low-molecular weight heparin therapy for venous thromboembolism—will unfractionated heparin survive?, 59(4):132
ING MR. [re: Physicians' greatest enemy - complacency], 59(8):320
IRELAND J. [re: Special Hawaii Medical Journal issue for Thomas Whelan, Jr., MD], 59(5):183
ISHIMARU-TSENG TV. Evaluation of late onset bipolar illness during menopause, 59(2):51
IWAISHI L. Learning to implement the medical home in communities, 59(1):15
IZUTSU S. Department of Public Health Sciences and Epidemiology (DPHSE) [Medical school hotline], 59(8):321
— Student profile: Class of 2004, John A. Burns School of Medicine (JABSOM) [Medical school hotline], 59(9):349
JOHNSON EW. Coronary artery bypass grafting performed with or without a bypass pump: early results, 59(2):54
JOHNSON RC. Alcohol use in Hawaii, 59(8):329
JONES CJ. relationship between type of antidepressant and neurovegetative symptoms in adult unipolar nonpsychotic depression: an opinion survey, 59(10):389
JOUXSON-MEYERS A. Special presentation to the State Legislature: Hawaii Coalition for Health, December 8, 1999, 59(2):62
KAILANI HK. first non-heart-beating organ donor in Hawaii - medical and ethical considerations, 59(9):353
KALRA M. Controversies in the treatment of venous ulcers: SEPSing?, 59(5):193
KASUYA RT. Clinical skills training at John A. Burns School of Medicine (JABSOM): teaching and learning the art, craft and science of clinical practice [Medical school hotline], 59(2):40
KEARNEY JA. Index to the Hawaii Medical Journal, volume 59, 2000, 59(12):451
KELLEY CR. review of workers' compensation claims: the frequency of claim denial and medical treatment delay, 59(1):11
KISTNER RL. Guest editorial, 59(4):116
— Can valves be preserved?, 59(4):128
— Calf vein DVT : surveillance and treatment, 59(4):130
— prospective evaluation of the risk for venous leg thrombosis associated with prolonged air travel: a pilot study, 59(4):167
— Guest editorial, 59(5):180
— Guest editorial, 59(6):236
— Treatment of primary venous insufficiency, 59(6):265
— Case of secondary deep venous disease, 59(6):278
KOOKER BM. Health education needs in Hawaii: social work, dental hygiene and nursing, 59(2):67
LABROPOULOS N. Chronic venous ulcers, 59(6):246
LAW SA. Special presentation to the State Legislature: Hawaii Coalition for Health, December 8, 1999, 59(2):62
LEE JD. Coronary artery bypass grafting performed with or without a bypass pump: early results, 59(2):54
LI GG. Malpractice risk assessment among different approaches for informed consent, 59(9):357
LIM RB. cell cycle, 59(7):300
LIMM WM. Attitudes of organ donation among Hawaii physicians, 59(11):407

LIMM WML. first non-heart-beating organ donor in Hawaii - medical and ethical considerations, 59(9):353
LOKE M. update of Hawaii's QUEST medical plans' performance, using HEDIS measures, 1997-1998, 59(11):411
LORD RSA. Air travel-related venous thromboembolism: Hawaii views, London views, Vienna views, Sydney views, Chicago views, 59(4):153
— Traveller's venous thromboembolism, 59(4):160
LURIE F. Valvuloplasty and primary venous insufficiency, 59(5):218
MACHIN S. Deep vein thrombosis in airline passengers - the incidence of deep vein thrombosis and the efficacy of elastic compression stockings, 59(4):162
MAKAROVA NP. Valvuloplasty and primary venous insufficiency, 59(5):218
MALOUF GM. Ambulatory venous surgery versus sclerotherapy, 59(6):248
MASAKI K. Postural hypertension in elderly men - the Honolulu Heart Program, 59(2):48
MASUDA EM. Calf vein DVT : surveillance and treatment, 59(4):130
MCELRATH AQ. Universal single payer health plan — answer to our dilemma?, 59(2):70
MCGRATH MA. Traveller's venous thromboembolism, 59(4):160
MCGRATH MJ. Differing attitudes between psychiatrists and primary care providers at the interface, 59(12):447
MELISH JS. Clinical skills training at John A. Burns School of Medicine (JABSOM): teaching and learning the art, craft and science of clinical practice [Medical school hotline], 59(2):40
MERZ RD. Epidemiology of neural tube defects, Hawaii, 1986-1997, 59(8):323
MEWISSEN MW. Catheter-directed thrombolysis for symptomatic lower extremity deep vein thrombosis, 59(4):141
MILLER RS. Why we need laws to protect patients from their health plan, 59(2):69
MIYAMOTO RH. Alcohol use in Hawaii, 59(8):329
MONETA GL. Calf vein thrombosis: anticoagulation for all?, 59(4):131
— Mechanism of action of compression therapy for venous ulceration, 59(5):192
MYERS KA. Controversies in diagnosis - clinical evaluation in the office, 59(5):199
NEGLEN P. Evaluation of obstruction, 59(5):209
— Angioplasty and stenting of the obstructed iliac vein, 59(6):276
NISHIMURA ST. Alcohol use in Hawaii, 59(8):329
NOEL A. Controversies in the treatment of venous ulcers: SEPSing?, 59(5):193
O'DONNELL TF JR. role of angioscopic valve repair for primary valve incompetence (PVI), 59(6):266
OGAWA T. International registry for reconstructive surgery in chronic venous disease, 59(5):217
— prospective evaluation of the risk for venous leg thrombosis associated with prolonged air travel: a pilot study, 59(4):167
ONAKA AT. End of life preferences in Hawaii, 59(12):440
OSTERLUND H. Healing touch, 59(3):94
— Pain resources for the Hawaii practitioner, 59(3):101
PADBERG F JR. Sensory impairment: a feature of chronic venous insufficiency, 59(5):203
PARASHAR UD. Diarrhea-associated hospitalizations among children in Hawaii, 59(9):362
PARSI K. prospective evaluation of the risk for venous leg thrombosis associated with prolonged air travel: a pilot study, 59(4):167
PARSI KA. Traveller's venous thromboembolism, 59(4):160
PARTSCH H. Iliofemoral DVT - ambulatory treatment, 59(4):139
— Air travel-related venous thromboembolism: Hawaii views, London views, Vienna views, Sydney views, Chicago views, 59(4):153
PEPPING J. Pain management: a synopsis, 59(3):99
PERRIN M. How my method of treatment changes the pathophysiology to heal the ulcer and prevent recurrence - reparing [sic] primary reflux, 59(5):197
— Recurrent varices after surgery (REVAS), 59(5):214
— Internal valvuloplasty, 59(6):268
POST LL. Handbook of pain management [Book review], 59(3):85
PURCELL D. Pain as a paradigm [Special commentary], 59(3):85
RADKAR G. Unusual presentation of pulmonary coccidioidomycosis in a traveler [Case of the month], 59(6):238
RAJU S. How my method of treatment changes the pathophysiology to heal the ulcer and prevent recurrence - repairing secondary incompetence, 59(5)198
— Invasive procedures: descending venogram, 59(5):211
— Case of secondary deep venous disease - something can always be done, 59(6):274
— Angioplasty and stenting of the obstructed iliac vein, 59(6):276
RUTHERFORD RB. Venous outcomes assessment in chronic venous disease, 59(5):216
SAIKI SM JR. Book review and commentary: Digital doctors by Marshall de Graffenreid Ruffin, Jr. [eDocs], 59(1):8
SASAKI TYJ. Angioimmunoblastic T-cell lymphoma (AIL-TCL) following macrolide administration, 59(2):44
SATO RL. Malpractice risk assessment among different approaches for informed consent, 59(9):357
SAWYER MAJ. cell cycle, 59(7):300
SCHATZ I. Postural hypertension in elderly men - the Honolulu Heart Program, 59(2):48
SCURR JH. Deep vein thrombosis in airline passengers - the incidence of deep vein thrombosis and the efficacy of elastic compression stockings, 59(4):162
SEIFRIED SE. Genetics in the John A. Burns School of Medicine Curriculum: a nationally recognized need and an opportunity for curricular integration [Medical school hotline], 59(4):117
— Technology-based delivery of PBL curricular elements at JABSOM [Medical school hotline], 59(6):240
SHEPHERD JK. relationship between type of antidepressant and neurovegetative symptoms in adult unipolar nonpsychotic depression: an opinion survey, 59(10):389
SHIRLAND B. Pain management and palliative care in hospice, 59(3):92
SIA CCJ. Learning to implement the medical home in communities, 59(1):15
SINGH HY. Hawaii State Legislature - ACT 228, Medical Marijuana Law, 59(9):351
SINGH N. cell cycle, 59(7):300
SMITH PC. My method of treatment changes the pathophysiology to heal the ulcer and prevent recurrence : drugs are the ultimate answer!, 59(5):191
SMITH PDC. Deep vein thrombosis in airline passengers - the incidence of deep vein thrombosis and the efficacy of elastic compression stockings, 59(4):162
SMYSER AA. patient's need to control his pain. 1999 [classical article], 59(3):90
SRIMANUNTHIPHOL J. review of the United Kingdom Prospective Diabetes Study (UKPDS) and a discussion of the implications for patient care, 59(7):295
STEINER GG. correlation between cancer incidence and kava consumption, 59(11):420
STODD RT. Clinical topics: highlights of the HMA Scientific Session, 59(1):23
— weathervane, 59(1):34
— weathervane, 59(2):78
— weathervane, 59(3):110
— weathervane, 59(4):174
— weathervane, 59(5):230
— weathervane, 59(6):286
— weathervane, 59(7):314
— weathervane, 59(8):342
— weathervane, 59(9):370
— weathervane, 59(10):398
— weathervane, 59(11):426
— Highlights of the HMA Scientific Session, 59(12):435
— weathervane, 59(12):458
STRANDNESS DE JR. vascular lab-duplex in reflux, 59(5):206
SUMIDA KNM. Angioimmunoblastic T-cell lymphoma (AIL-TCL) following macrolide administration, 59(2):44
SUMNER DS. office - the hand-held Doppler, 59(5):200
TABA S. Learning to implement the medical home in communities, 59(1):15
TAM LQ. Encoding specificity and problem-based learning (PBL) [Medical school hotline], 59(5):184
TAOKA S. Coronary artery bypass grafting performed with or without a bypass pump: early results, 59(2):54
TASSIOPOULOS AK. Chronic venous ulcers, 59(6):246
TERUYA TH. Could prolonged air travel be causally associated with subclavian vein thromboembolism?, 59(4):164
THORPE PE. role of flow-directed thrombolytic therapy in the treatment of lower extremity thrombosis: evaluating and treating the entire limb, 59(4):132
TOKESHI J. Dexamethasone use in adult meningococcal meningitis, 59(7):308
— Emphysematous pyelonephritis, 59(8):336
TSAI N. Chronic hepatitis C caused by a virus—fiction or for real? A response to an article published in the ABC News website [Special contribution], 59(1):5
UHL JF. evaluation in Europe of the C of CEAP, 59(5):202

VAREZ D. Paniolo, 59(1):3
— Hula, 59(2):39
— Pele, Hi'iaka and Lohiau, 59(3):83
— Iolani Barracks, 59(4):115
— Royal Hawaiian Hotel, 59(5):179
— Moana Hotel, 59(6):235
— BB 63 USS Missouri, 59(7):291
— Old plantation, 59(8):319
— Honolulu Academy of Arts, 59(9):347
— Bishop Museum, 59(10):375
— Iolani Palace, 59(11):403
— Bishop Planetarium, 59(12):431
VILLAVICENCIO JL. New trends and operative techniques in the management of varicose veins, 59(6):249
VOGEL CW. Cancer Research Center of Hawaii, University of Hawaii, 59(12):438
VOLKMANN R. Reliability of clinical diagnosis in varicose veins: a prospective comparison between clinical examination and Duplex ultrasound, 59(5):205
WAKEFIELD TW. scientific evidence for early removal of the thrombus to improve outcome, 59(4):126
WANG JS. Invasive techniques utilized in chronic pain management, 59(3):96
WEEKS MG. Ehrlichiosis . . . in Hawaii? An unusual presentation [Case of the month], 59(5):182
WITHY K. role of AHEC in medical education [Medical school hotline], 59(11):404
WONG L. Attitudes of organ donation among Hawaii physicians, 59(11):407
WONG LL. Attitudes of organ donation among Hawaii physicians, 59(11):407
WONG W. Use of donepezil in elderly patients with Alzheimer's disease - a Hawaii based study, 59(2):57
YAMAMOTO LG. Malpractice risk assessment among different approaches for informed consent, 59(9):357
YOKOYAMA HN. News and notes, 59(1):30
— News and notes, 59(3):107
— News and notes, 59(4):172
— News and notes, 59(5):228
— News and notes, 59(6):284
— News and notes, 59(8):338
— News and notes, 59(9):366
— News and notes. 1969 [classical article], 59(10):394
ZELKO S. [re: article about John M. Zelko MD], 59(1):7

Classified Notices

To place a classified notice:

HMA members.–Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.

Nonmembers.–Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Physician Wanted

BIG ISLAND OF HAWAII– Multi-specialty group practice seeking BC/BE OB/Gyn to service community of 35,000+; in breathtaking upcountry setting. Waimea is 15-20 minutes from beautiful uncrowded beaches and world class golf courses. Various start-up options available with partnership potential. Contact Linda (808) 885-9606 or fax (808) 885-9506. Aloha!

For Sale

GENERAL/OCCUPATIONAL MEDICINE PRACTICE ON MAUI– Flexible lease terms; fully furnished and equipped. Fax: (808) 373-3843.

WE COLLECT PAST DUE ACCOUNTS

Only 25%* fee for Health Care Firms!

Why give up more!

Wood & Tait

HI Collection & Detective Agency
Staff on Kauai, Oahu, Maui, & Hawaii
http://www.woodtait.com

739-0433

jwood@woodtait.com

*Applies to accounts assigned during this promotion; no restrictions as to dollar size or age of accounts. Fee will increase to 50% if litigation or forwarding required; you will receive a contract.

Aloha Laboratories, Inc.
...When results count

CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

David M. Amberger, M.D.
Laboratory Director

Phone:(808) 842-6600
Fax: (808) 848-0663
E-mail: results@alohalabs.com
http://www.alohalabs.com

Space JAM?

Lots of important files? No more room? Don't let a few dollars keep you frustrated.

FREE! FIRST MONTH* Any Size Locker

*Some restrictions may apply

SAFE AND CLEAN ENVIRONMENT TO STORE ALL YOUR DOCUMENTS!
"EZ" hours - Open 7 Days a week!
(One of the best in town - Truly an EZ Access.)

BBB MEMBER HAWAII

Call Now For FREE TRUCK & DRIVER!

EZ-ACCESS STORAGE SYSTEMS

HAWAII'S LEADING SELF STORAGE FOR OVER 20 YEARS!

CENTRAL AREA (near Ward Ave.) Close to Waikiki, Ala Moana & Downtown. 592-0220

NORTH KING AREA (in Kalihi) Close to Freeway, Kam Heights & Salt Lake. 832-0450

The Weathervane Russell T. Stodd MD

I've Enjoyed As Much Of This As I Can Stand.
Since it has been established that the daily intake of two ounces of alcohol is associated with a decreased risk of coronary artery disease, it has been postulated that a beneficial effect may also be occurring in regard to retinal circulation. By further extension, perhaps a little booze may have some positive effect by causing a choroidal blush thus decreasing the risk of age-related macular degeneration (AMD). Harvard University conducted a prospective study over an eight year period using 32,764 female nurses and 29,488 male health care workers aged 50 years and older. Beer intake was not related to AMD, but wine consumption of two drinks or more per day produced a higher (not lower) risk of AMD in both men and women.

Two Other Places Air Travel Has Brought Closer Together Are This World And The Next.
About 20 minutes before landing in Salt Lake City, Jonathan Burton, age 19 years, became agitated aboard Boeing 737 Southwest Airlines flight 1763 last August 11th. He began acting wildly and kicked through the center of the cabin door into the cockpit. Unable to control him, the two female flight attendants asked the aid of passengers. At least six to eight people helped subdue Mr. Burton, and in their zeal, they killed him by suffocation! Authorities ruled the death a homicide, but called it a case of self-defense. A Southwest spokesman called it an attempted hijacking, and not "air rage." Stephen Luckey, chairman of the Air Line Pilots Association security committee, said "Fear is a great magnifier. No one wants to see a 19 year old die, but certainly no one wants the plane to go down." In 1996, the FAA issued an advisory suggesting increased training for such events, but many airlines have done little, and some nothing at all. With only two pilots aboard, the FAA said that it would be dangerous for a pilot to become involved in subduing a disruptive passenger. "At times, it may be wise to involve passengers," the FAA noted in its advisory. Flight attendants receive extensive training in how to handle crash landings, but when faced with a passenger crisis, they often have little training to fall back on. It's about time to include such education.

Letting The Cat Out Of The Bag Is Much Easier Than Putting It Back In.
The sporozoan Toxoplasma gondii is widespread in areas where cats are found. Experts tell us that 60% of Hawaii's adults have been infected with T. gondii. Devastating toxoplasmosis infections can occur in AIDS patients or transplant patients on immuno-suppressive therapy, and pre-natal fetal infection can lead to blindness, mental retardation, or death. For some time it was believed that infections were caused by consuming raw or undercooked meat from infected animals, but in 1970 it was found that Toxo oocysts were present in cat fecal material. Subsequent study demonstrated that the oocysts could remain infective for as long as a year in a warm-humid environment. Hawaii is an ideal endemic area. The relationship between cats and many intermediate hosts, e.g., birds, chickens, goats, sheep, pigs and even filth flies, cockroaches, snails, slugs, geckos, can provide avenues for human exposure. Prevalence of infection varies between ethnic groups, due to variations in human factors like hygiene, cooking habits and sanitation. Outbreaks have occurred in Hawaii involving soldiers who drank contaminated water, patrons of a riding stable, and pre-school aged children.

Knowledge Is No Prerequisite For Authority.
The New England Journal of Medicine reported a study on the value of routine preoperative medical testing before cataract surgery. In a prospective, randomized study from nine participating centers, 18,189 patients were assigned to a group that had routine lab testing or one that had no such testing. History and physical exams were performed on both groups, and half of the group also underwent EKG, CBC, serum electrolytes, BUN, creatinine, and glucose. The authors of the study found no significant differences in the rates and types of intra-operative and post-operative adverse medical events between the two groups. The report indicates that specific testing is only valuable if the history or physical exam indicates such need, but otherwise the routine testing has no value and adds significantly to the cost of cataract care. Estimates are that more than $100 million could be saved annually if appropriate guidelines were established.

Nothing Is More Hopeless Than A Scheme Of Wealth And Merriment.
The venerable Nalle Clinic in Charlotte, North Carolina, oldest medical group and the city's only multi-specialty clinic decided to call it quits in June. The straw that broke the 79 year-old clinic's back was the mass resignation of one-fourth of the clinic's physicians. Since 1990 the clinic has been managed by the Nashville, Tennessee, practice management company, PhyCor. The 36 Nalle physicians sold the practice assets and accounts to PhyCor 10 years ago, and agreed to pay 12% of its profits in exchange for management services. In the past two years the clinic began feeling financially strained and payments slowed and physician's pay fluctuated. Then physicians pay declined, some by as much as 80%, and the exodus was underway. Several prominent physicians left last summer, and this year the staff collapsed in departures. Considering what has happened on Maui with PhyCor's problems with the Maui Medical Group, plus their other multiple malfunctions on the mainland, one wonders just how much damage has been done to medical groups with the so-called medical management companies. Of course, the real genesis of the practice management disorders, as well as many HMO headaches, relates to many physicians' inability to say "no thanks" when someone waved some cash before their eyes.

According To My Calulations, The Problem Doesn't Exist.
The Food and Drug Administration has approved the controversial abortive drug RU-486 (mifespristone) for prescription use. Most of the nation's large insurers have stated that the drug will be covered, and it is predicted that physicians will gradually include use of the drug in their practices if they will not be subject to harassment. Coming at a time when Governor Bush and VP Gore are pounding into the last days before the Presidential election, the matter is one of large political impact. Unfortunately, the AMA policy that such matters are between the doctor and the patient, and should not be political, matters very little. Democrats are already using the issue as a matter of a woman's right of freedom and privacy, while the Republican advisors are not pushing Bush, and would like not to alienate the women's vote.

Seen It All. Done It All. Can't Remember Most Of It.
When Governor Cayetano signed the medical marijuana bill, Hawaii became the first (We're number one !!) state in which the legislature prepared and passed such legislation. All other marijuana states, Alaska, Arizona, California, Maine, Oregon and Washington, passed the law through ballot initiatives. Under the tightly worded measure, patients must register annually with the Department of Public Safety. Patients will be allowed to use the drug to relieve symptoms of cancer, glaucoma, HIV, AIDS, multiple sclerosis, epilepsy and Crohn's disease and also those suffering from cachexia, pain, nausea, seizures and muscle spasms. On the downside of the issue is a recent study in the *Journal of Immunology* reporting that cannabis can promote tumor growth by reducing immunity and can also lower resistance to bacterial and viral infections.

Ah, Sweet Mystery Of Life!
When Mary Sue Stowe broke up with her husband, Junior Davis, she claimed custody of seven frozen embryos that had been fertilized by Junior's sperm. Davis wanted them brought back to room temperature. The case went all the way to the U.S. Supreme Court where the Court sided with Junior. Her lawyer said that Mary Sue was "devastated" but would try to talk to her ex-husband and persuade him to change his mind. Maybe it was better when God (nature) planned all these things.

ADDENDA

❖ Loss of one eye reduces the visual field by about 20%.

❖ During the decade of the 1980's 230 companies (46%) disappeared from the "Fortune 500."

❖ Most vegetarians look so much like the food they eat, that they can be classified as cannibals.

❖ Alcohol and calculus don't mix. Never drink and derive.

❖ I've been around so long, that I remember when music was clean and sex was dirty.

Aloha and keep the faith —rts■

Contents of this column do not necessarily reflect the opinion or position of the Hawaii Ophthalmological Society. Editorial comment is strictly that of the writer.

Our pledge to you

As Straub physicians, we welcome your referrals... and pledge to:

- Report our evaluation to you promptly by phone, fax or mail (whatever you prefer).
- Never make secondary referrals without your approval.
- Always direct the patient back to you for continuing care.

To make your referrals easy, we have a Physician Referral Specialist, Kym Kaohi. To contact Kym and to get a binder on Straub specialists and services, call 522-4444.





Straub
Partners in health
straubhealth.com

For assistance, call Kym at 522-4444

One of a kind.



Unmistakable.

At MIEC, we know what it means to stand out in the crowd. Twenty-five years ago, we started the West's first doctor-owned, not-for-profit malpractice insurance company. The idea quickly caught on, and now there are dozens of "doctor-owned" companies throughout the country.

But there is only one MIEC. Our rate and dividend history is unparalleled. Guess that's why we don't need a large sales or marketing staff. Our track record speaks for itself.

The original is still the best. Call us.

Medical Insurance Exchange of California
6250 Claremont Avenue, Oakland, California 94618
Telephone 800-227-4527 www.miec.com
HAWAII CLAIMS OFFICE: 1360 South Beretania Street, Honolulu, Hawaii 96814

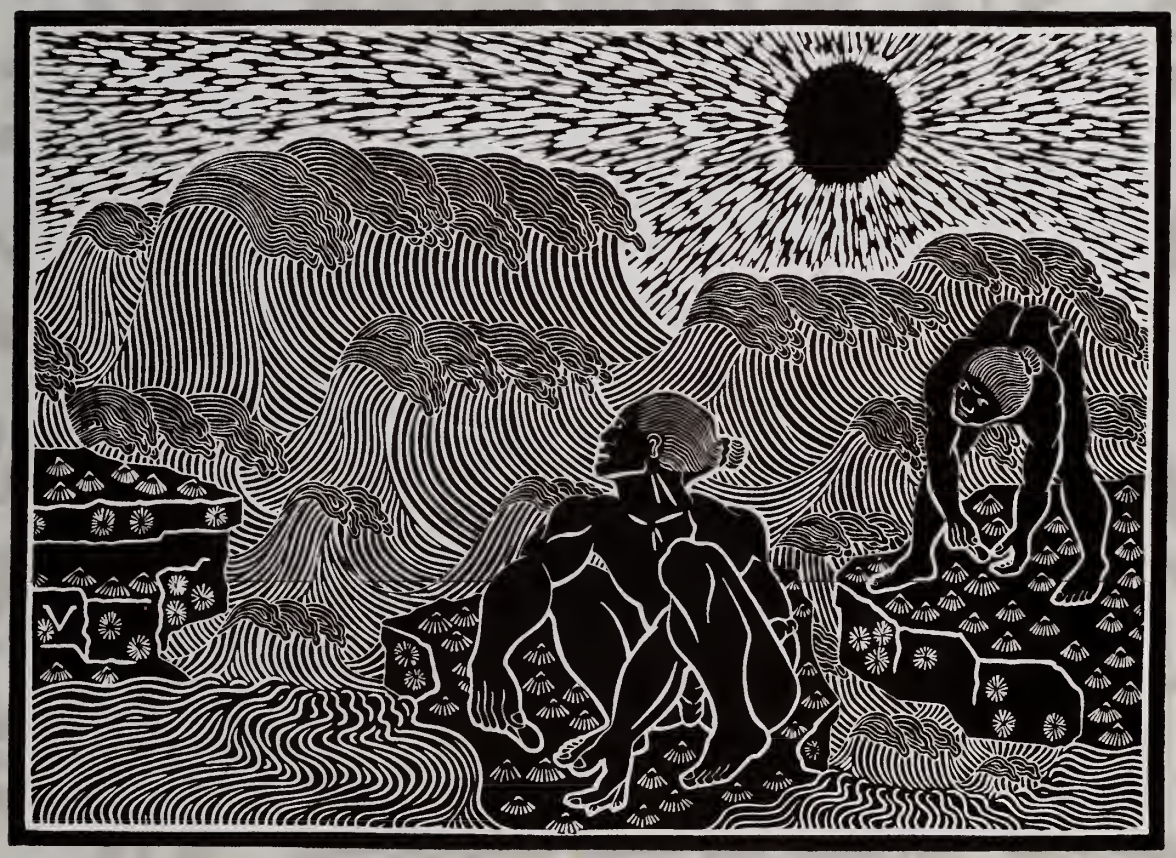
Our 25th Anniversary, 1975–2000

Sponsored by Hawaii Medical Association

Hawaii medical journal
v. 59
no. 12
December 2000
Received on microfilm
Brown University Library
HCL

HAWAII MEDICAL JOURNAL

January 2001 Volume 60, No. 1 ISSN: 0017-8594



MIXED ADC 967
Serials Dept
Sciences Library
Box 1
Brown University
Providence, RI 02912-0001

HAWAII MEDICAL ASSOCIATION 1856


1% ONCE A DAY
Noritate™
(metronidazole cream) Cream, 1%
PSORCON®
(diflorasone diacetate cream) 0.05%
(diflorasone diacetate ointment) 0.05%
BENZAMYCIN® Topical Gel
(3% erythromycin, 5% benzoyl peroxide)
Klaron®
(sodium sulfacetamide lotion) 10%
DERMIK
Innovation that makes a world of difference
Our Mission: To become a global leader in providing innovative dermatological products to patients and healthcare providers.
To learn more, call 1.610.454.8110, or visit our site on the World Wide Web at http://www.dermik.com
Platinum Benefactor
Honor Society
Dermik Laboratories supports research in skin care through a grant to the Dermatology Foundation
DERMIK LABORATORIES, INC.
Dedicated to Dermatology™
A RHÔNE-POULENC RORER COMPANY

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
Vincent S. Aoki MD, Benjamin W. Berg MD,
John Breinich MLS, Satoru Izutsu PhD,
James Lumeng MD, Douglas G. Massey MD,
Myron E. Shirasu MD, Frank L. Tabrah MD,
Alfred D. Morris MD

Journal Staff
Editorial Assistant: Drake Chinen

Officers
President: Philip Hellreich MD
President-Elect: Gerald McKenna MD
Secretary: Calvin Wong MD
Treasurer: Paul DeMare MD
Past President: James Lumeng MD

County Presidents
Hawaii: David Camacho MD
Honolulu: William McKenzie MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Patrick Aiu MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 1999 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 4

Commentary: A Tribute to Ralph Cloward MD 4

Medical School Hotline
Jeffrey Okamoto MD 5

Clinical and Epidemiological Observations Regarding the 1998 Kauai Murine Typhus Outbreak
Sally Jo Manea BSN, David M. Sasaki DVM, MPH, James K. Ikeda MS, and Philip P. Bruno DO, FACP 7

Fat Embolism, ARDS, Coma, Death: The Four Horsemen of the Fractured Hip
Jerry E. Prentiss MD and Elaine M. Imoto MD 15

Classified Notices 21

Weathervane
Russell T. Stodd MD 22



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

Opihi

Opihi is the caviar of Hawaii, many people have been killed in the pursuit of this delicacy.

Editorial

Norman Goldstein MD
Editor, Hawaii Medical Journal

Kauai Murine Typhus

Typhus is still with us, especially on Kauai, but all Hawaii islands have reported cases. Philip P. Bruno DO, FACP, and his associates at the Hawaii Department of Health alert us to the ever-present murine typhus.

After five days of chills, fever, aches and pains, a pink macular eruption appears on the trunk and axillary folds, then rapidly spreads to the rest of the body, usually sparing the face, palms and soles. Two of their cases had facial eruptions. The authors emphasize that the occurrence of fever and rashes are suggestive but that the eruptions are nonspecific and may not be present.

It is concluded that Hawaii physicians should be cognizant of widespread murine typhus reservoirs and vectors in our state and maintain a high degree of suspicion for murine typhus in cases of acute undifferentiated febrile illness, especially with unexplained liver enzyme elevations.

The Four Horsemen of the Fractured Hip

As our population ages, more hip and knee replacement procedures are being done. The complication rate from all causes is about 2 percent with mortality about 0.1 percent. Doctors Prentiss, Scoggin and Imoto present an excellent review of the Fat Embolism Syndrome, and Adult Respiratory Distress Syndrome, coma and death – "The Four Horsemen of the Fractured Hip."

One of our peer reviewers commented, "there has been no mention of the use of hyperbaric oxygen in the Fat Embolism Syndrome. I don't know any studies addressing this topic which may be worthy of mention." Since hyperbaric oxygen is now available in Hawaii perhaps this might be considered in future cases of the fat embolism syndrome.

Because, as Gerald Mayfield MD, states in his commentary, "Fat embolism syndrome causing death, especially in the patient undergoing elective reconstructed surgery, is traumatic to all concerned: patient, family and surgeon." This provocative manuscript should be of interest to the orthopedists, pulmonary medicine specialists, anesthesiologists and indeed to all physicians.

Hawaii Poison Center
941-4411
Neighbor Islands Toll Free
1-800-362-3585
Children Act Fast So Do POISONS!

More than 40 years of service • Donate to help us save lives

Commentary

A Tribute to Ralph Cloward MD



Ralph B. Cloward, MD
Sept. 24, 1908 - Nov. 13, 2000

Dr. Ralph Cloward or "RB" as he was known to his close friends and fellows Rotarians, died on Nov. 13, 2000 at the age of 92. He was a member of the Honolulu Rotary Club for 59 years and was declared a "Rotary Treasure." He was also a valuable member of the Hawaii Medical Association and a "medical treasure." Thanks to the Honolulu Rotary Club, we reprint RB Cloward's Life's Finest Gifts.

Life's Finest Gifts

When you get on and you've lived a lot
and the blood in your veins isn't quite so hot
and your eyes are dimmer than what they were
and the page on a book has a misty blur,
strange as the case may seem to be
then is the time you clearly see.
You'll see yourself as you really are
when you've lived a lot and you've traveled far;
when your strength gives out and your muscles tire
you'll see the folly of mad desires;
you'll see what when your eyes had hid -
the countless trivial things you did.
For often the blindest are youthful eyes;
age must come e're man grows wise.
Youth makes much of the mountain peaks,
the strife for fame and the goal he seeks,
but age sits down with the setting sun
and enjoys the useful deed he's done.
You'll sigh for the friends that were cast aside
with a hasty word or a show of pride,
and you'll laugh at medals which you prize
because you'll see them through different eyes.
You'll understand how little they really meant
for which so much of your strength was spent.
You'll see as always an old man sees,
that the waves die down with the fading breeze,
and the pomps of life never last for long,
the great sink back to the common throng,
but you'll understand when the struggle ends
that the finest gifts in life are friends!

Ralph B. Cloward

Medical School Hotline

Childhood Disabilities in Medical Education at the John A. Burns School of Medicine (JABSOM)

Jeffrey Okamoto MD,
Assistant Professor of Pediatric, JABSOM;
Kathy Ratliffe PhD, and Anna Ah Sam MPH,
University Affiliated Program,
University of Hawaii at Manoa

Physicians have essential roles in identifying, treating, and supporting people with disabilities. This is particularly true in childhood, when early intervention and special education programs can lead children with disabilities to happier lives with greater independence. Families expect their physicians to be expert in screening for disabilities, managing children with disabilities, and referring to necessary subspecialists.[1]

Also, parents and other caregivers want physicians to be particularly caring and supportive when given the news of their child's diagnoses and conditions. There is an expectation for physicians to be knowledgeable about community resources for children with disabilities and their families. However, many practicing physicians feel they are not adequately trained in these areas.[2]

The JABSOM and the Center on Disability Studies (Hawaii University Affiliated Program) at the University of Hawaii at Manoa recently completed a three year federally sponsored grant that trained and continues to train medical students in these roles. This project was funded by the Office of Special Education and Rehabilitative Services in the US Department of Education. This agency and national experts such as Charney thought it important that physicians be immersed in and have improved understanding of early intervention (EI) and special education programs.[3]

The project supported training in each of the four years of medical school. Curriculum supported by the grant is now well established, supplementing that which previously existed. Novel learning environments were developed particularly with the support of faculty and staff from the Department of Pediatrics at JABSOM and Center on Disability Studies.

New activities include a first year medical student experience around children with varying levels of disabilities. Selected student-physicians become involved once a week for a year with children and bond to staff working with these children at several EI programs and schools around the State. With the supervision of teachers and therapists, these student-physicians feed children with difficulty eating and help children with cerebral palsy learn to ambulate. They research the disabilities they observe. They better appreciate the need for physicians to work together with schools and EI programs in coordinating a comprehensive system of care around children with disabilities.

All first and second year students have Health Care Problems (HCPs) involving children with disabilities. The learning issues that they research around these HCPs include the system of medical care around these children, and community resources available around children with disabilities and chronic illnesses.

Third year medical students have participated and continue to participate in an innovative and exciting part of the project to learn about EI programs in Hawaii. EI programs on Oahu (including the State-run Lanakila, Wahiawa, Leeward, and Windward Early Childhood Services Programs; Sultan Easter Seals; United Cerebral Palsy; Waianae Parent and Children Developmental Center; and Kapiolani Mobile Therapy Team) have embraced this need for an in depth orientation of student-physicians to the early intervention system.

In the third year of the JABSOM, about 8-12 students rotate in Pediatrics every 7 weeks (a "block"). Each student-physician in a Pediatric block is assigned to a particular EI program and each is assigned a particular specialty or discipline: occupational therapy, physical therapy, speech language therapy, nutrition, audiology, primary care provider, nurse and physician specialists, public health nursing, behavioral specialist, special education or social work. During a half day during their outpatient clinic experience within the Pediatric block, a student-physician goes to the program and learns about the program in general. They also learn about the specialty or discipline to which they were assigned. Their learning is focused around a specially selected child at the program.

At the end of their block, these student-physicians meet in a colloquium with project faculty. EI program staff and the family of the child selected for the block also usually attend. Sharing of information about the various specialties and disciplines occurs, with each student-physician making a presentation on their selected area. The physician's role in caring for children with disabilities, and physician interaction with EI programs are important areas of discussion. Overview of the system around EI programs (including transition to special education and then to adult programs), federal mandates (such as IDEA, the Individuals with Disabilities Education Act), family centered principles and EI transdisciplinary models are also highlighted.

Fourth year student-physicians interested in pediatrics, family practice, psychiatry and rehabilitation work can take a Pediatric elective where they are immersed in schools and EI programs. Rotations on Oahu, Molokai, Kauai, and the Big Island have been completed in the past. The student-physicians taking this elective better understand the physician role as medical consultant to these programs. They are supervised by project staff including several Developmental Behavioral Pediatrics faculty members and Pediatric residents. They help in problem solving and are liaisons to community physicians around children with mental health, physical and developmental disabilities.

As a result of this month long experience, these fourth year student-physicians become more facile in working with children with autism, mental retardation, cerebral palsy, attention deficit hyperactivity disorder, Down Syndrome, and many other conditions and disorders. They work with children requiring technological supports such as gastrostomy tubes, tracheostomy tubes, assistive devices, wheelchairs, and other ambulatory aids. They learn to understand the strengths and weaknesses of how the medical system interfaces with community resources. The student-physicians give well received inservices on medical topics to administrators, teachers, therapists, and counselors at the schools and EI programs. Positive feedback from school and EI program personnel point to the

Continues on p. 20

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA

Clinical and Epidemiological Observations Regarding the 1998 Kauai Murine Typhus Outbreak

Sally Jo Manea BSN, David M. Sasaki DVM, MPH, James K. Ikeda MS, and Philip P. Bruno DO, FACP

Abstract

Five cases of murine typhus occurring on southwestern Kauai in 1998 are described, following an investigation by the Department of Health. Two cases also had concurrent leptospirosis. Recent habitat changes of peridomestic animals and their fleas may have increased the risk for developing murine typhus. Increased suspicion of typhus by island physicians and more aggressive rodent control activities are recommended.

Introduction

Murine typhus was first diagnosed in Hawaii in 1933 and reported by Fennel in 1934.[1] The diagnosis was based on clinical findings, positive Weil-Felix reactions, and protection tests carried out by the U.S. Public Health Service in guinea pigs with serum from suspected cases. The earliest clinical and epidemiological features of the disease in humans were published in 1938 and 1941.[2, 3] The incidence of typhus in Hawaii peaked in fiscal year 1944 when 186 cases were reported; Oahu accounted for 149 (80%) cases, Maui for 28 (15%), Kauai for 7 (4%), and Hawaii for 2 (1%) cases. The low prevalence on Kauai and Hawaii was the result of higher rainfall than was observed on Oahu and Maui, which is not ideal for typhus.[4] Cases were controlled at the end of World War II by dusting Dichloro-Diphenyl-Trichloroethane (DDT) into rodent burrows. By 1950, only 12 cases were reported in the Territory of Hawaii. During this time, national reported annual incidence of murine typhus dropped from more than 5,000 cases in the 1940s to fewer than 100 in the 1980's.[5]

The Kihei area of Maui became recognized as a hyperendemic area for murine typhus in 1972, and accounted for most of the recently reported cases in the State of Hawaii.[6] From 1994 through 1998, 33 cases were reported to the State of Hawaii Department of Health (DOH): 24 from Maui, three from Molokai, one from Oahu, and five from Kauai.

Correspondence to:
Philip P. Bruno DO, FACP
Hawaii Department of Health
Communicable Disease Division
P. O. Box 3378
Honolulu, HI 96801-3378

The five cases of murine typhus from Kauai occurred on the southwest coast of the island in 1998. This occurrence is unusual because Kauai had never been recognized as having an endemic focus of murine typhus. The last previously reported case from the island was in 1982. These five cases represent the highest annual incidence of the disease on Kauai since the 1940s. This paper reviews the clinical and epidemiological features of the 1998 murine typhus outbreak on Kauai, and offers a hypothesis as to why the southwest region of Kauai may be emerging as a new endemic site for murine typhus in the State.

Methods

The DOH was notified of five positive serologic test results for murine typhus on Kauai during 1998. A laboratory confirmed case was defined as a person with a clinically compatible illness having a four-fold rise in IgG antibody titer to typhus group antigen as detected by the Indirect Fluorescent Antibody (IFA) test with a minimum convalescent titer of 1:64 in specimens taken $\geq$ two weeks apart. A probable case was defined as a patient with a single IgM or IgG IFA titer to typhus group antigen of $\geq$ 1:128.

Each person with a positive serologic test was interviewed by the Kauai epidemiological specialist, and a standard epidemiology Case Investigation Report form was completed. Clinical and epidemiologic information was abstracted from outpatient and hospital medical records. Age, sex, residence, rodent and flea exposure, date of illness onset, duration of illness, symptoms and signs, laboratory test results, course of illness, therapy, and outcome for each person was reviewed. Five acute murine typhus infections were documented.

The DOH Vector Control Branch performed rodent trapping at the homes of three of the five cases. Rats were trapped, sprayed with a synthetic pyrethroid aerosol in the field to reduce fleas, and transported to the Kauai Vector Control Laboratory for processing. No flea isolation or identification was performed. The rats were euthanized, and tissues and organs were examined and processed. Rat serum samples for IFA tests against *Rickettsia typhi* were obtained by heart puncture. Rodent tissue and serum samples were then sent to the Vector Control Branch Laboratory in Honolulu where the serologic tests were performed. Statewide rodent testing between 1992 and 1998 included IFA testing for *R. typhi*, and rodent kidney cultures for leptospirosis.

Results

Two of the cases were confirmed, and three were probable. The

cases occurred throughout the year along the southwest coast of Kauai. There was no seasonal trend. The first case occurred in Kekaha during April. The second case occurred in August at Makaweli. Two cases occurred in the same neighborhood in Waimea during October and November. The fifth case occurred in Kekaha at the end of December.

Four of five cases had rodent and flea exposure around their homes. The fifth case had a pet kitten infested with fleas. Rats trapped at the homes of the cases in Makaweli and Waimea were positive for *R. typhi* by IFA serology.

The cases ranged from 33 to 80 years of age with a median age of 42 years. The male/female ratio was 4:1. Signs and symptoms during the course of illness are summarized in Table 1. The mean duration of illness was 11 days with a range of five to 17 days. One patient was treated as an outpatient for mild illness that was characterized by fevers, sore throat, gastrointestinal symptoms, myalgias, headache, photophobia, and cough. He had the longest duration of illness with a remitting and relapsing course and a prolonged period of convalescence.

Table 1.— Clinical Manifestations During the Course of Murine Typhus

Manifestation	Number
Fever	5/5
Headache	4/5
Myalgias	4/5
Elevated Liver Enzymes	4/4
Chills	3/5
Hypotension	3/5
Cough	3/5
Pneumonitis	2/5
Macular Rash	2/5
Conjunctivitis/Conjunctival Suffusion	2/5
Pharyngitis	2/5
Arthralgias	2/5
Night Sweats	2/5
Abdominal Pain	2/5
Vomiting	1/5
Diarrhea	1/5
Increased Urinary Frequency	1/5
Thrombocytopenia	1/5
Microscopic Hematuria/Pyuria	1/5
Cervical Lymphadenitis	1/5

Four cases required hospitalization. The mean duration of hospitalization was 5.5 days with a range from four to seven days. The hospitalized patients all presented with an acute undifferentiated febrile illness, headaches, chills, and myalgias. Three cases had severe hypotension requiring fluid resuscitation. Two patients were admitted with a macular erythematous skin eruption located on the face, chest, back, abdomen, and proximal upper extremities. Two had pneumonitis on chest x-ray. All four hospitalized cases had hepatic serum enzyme abnormalities consistent with hepatitis. Lactate dehydrogenase was increased in two patients with peak values of 2,382 U/L, and 1,247 U/L. All four cases had moderate peak elevations of aspartate aminotransferase (AST, SGOT) with a range 92 U/L to 687 U/L, and alanine aminotransferase (ALT, SGPT) with a range 300 U/L to 698 U/L. Alkaline phosphatase was moderately elevated in three cases. Clinical jaundice did not occur, and bilirubin levels were normal. Blood cultures were negative.

Thrombocytopenia occurred in one case. The peripheral white blood cell count was normal in all cases, but two cases had increases in the percentage of bands in the differential count. Hemoglobin was minimally reduced in two cases. Renal function was normal. Urinalysis was abnormal in only one case demonstrating both microscopic hematuria and microscopic pyuria.

The Weil-Felix screening test was performed in three cases. A positive Weil-Felix reaction titer is ≥1:160. All three were OX-19 positive. Two cases also were OX-K positive. One case was positive for OX-19, OX-K, and OX-2 antigens. Two patients had acute IgM antibody titers by IFA of 1:64 to typhus group antigens. All had convalescent IgG antibody titers by IFA ≥ 1:256 to typhus group antigens. Two cases had serologic evidence of concurrent leptospirosis infection by demonstrating positive acute and convalescent microscopic agglutination test titers for *Leptospira interrogans* serogroup Australis.

Table 2 lists the initial diagnoses, serologic diagnoses, treatments, and outcomes of these five cases. The nonspecific nature of the illness made clinical diagnosis difficult. These cases presented with initial diagnoses of Rocky Mountain spotted fever (RMSF), viral syndrome, urosepsis, sepsis, and pneumonia. The attending physicians considered leptospirosis and rickettsial disease in the differential diagnosis of all five cases.

Table 2.— Initial Diagnosis, Serology, Treatment (Rx), And Outcome For The Five Murine Typhus Cases

Initial Diagnosis	Typhus Serology†	Leptospirosis Serology‡	Rx	Outcome
Rocky Mountain Spotted Fever	≥ 1:256	Negative	D/Di	Recovery
Viral Syndrome	≥ 1:256	Negative	D	Recovery
Urosepsis	≥ 1:256	Negative	D/C	Recovery
Sepsis	≥ 1:256	1:800	D/C	Recovery
Pneumonia	≥ 1:256	1:400	T/C	Recovery

†IgG indirect immunofluorescent antibody assay against typhus-group antigen

‡Microscopic agglutination test for *Leptospira interrogans* serogroup Australis

D = Doxycycline, C = Ceftriaxone, T = Trovofloxacin, Di = Dicloxacillin

Appropriate antibiotic therapy was promptly initiated in all the cases. Clinical improvement occurred quickly following antibiotic administration and fluid resuscitation. Most patients became afebrile two to four days after the start of antirickettsial therapy. Four patients received a therapeutic course of doxycycline, and one patient completed a course of therapy with trovofloxacin. All received a beta-lactam antibiotic during the period of therapy to treat presumptively for other bacterial infections pending blood and body fluid culture results. All patients recovered without complications.

Tables 3a and 3b summarize statewide rodent testing data between 1992 and 1998. Testing was done on rodents trapped during community surveys throughout the state, as well as at probable exposure sites when cases of murine typhus and leptospirosis were reported. The high rodent typhus prevalence on Maui was the result

of trapping focused in the hyperendemic area of Kihei. Until the outbreak on Kauai was reported, rodent trapping was focused on the east side (wetter area) of the island where leptospirosis cases were more prevalent. In spite of the low overall typhus prevalence on Kauai, 1998 trapping conducted around exposure sites of the cases from Makaweli and Waimea showed that four of eight rats trapped were positive for typhus. Rodent trapping was not conducted in Kekaha. Statewide infection rates for leptospirosis in humans and rodents have historically been highest on the islands of Hawaii and Kauai in areas of high rainfall. The rodents trapped in Makaweli and Waimea were not cultured for leptospirosis.

Table 3a.— Rodent Testing In Hawaii: 1992-1998[1]
Murine Typhus

Island	Murine Typhus		
	# Tested	# Pos	% Pos.
Hawaii	3948	16[a]	0.4
Maui	1308	213[b]	16.3
Oahu	1629	32[c]	2.0
Kauai	1590	20[d]	1.3

Table 3b.— Rodent Testing in Hawaii: 1992-1998[1]
Leptospirosis[2]

Island	Leptospirosis		
	# Tested	# Pos	% Pos.
Hawaii	7651	1840	24.0
Maui	205	0	0
Oahu	2692	314	11.7
Kauai	2158	237	11.0

[1] Number of animals tested varied by disease because mongooses and mice were not tested for typhus, and because of periodic personnel shortages. There are no mongooses on Kauai.
[2] Leptospirosis testing included mongooses, rats and mice. On Maui, rodents trapped during the Kahului residential surveys were not tested for leptospirosis, nor were animals captured during routine surveillance.

[a] Typhus-positive rodents were recovered from Honolii, Papaikou, Panaewa, Kealia, Kukuihaele, Kalaoa, Waikoloa, Kukaiau, and Kailua-Kona.
[b] Typhus-positive rodents were recovered from Kula, Wailuku, Waihee, Haiku, Paia, Kahului and Kihei (majority).
[c] Typhus-positive rodents were recovered from Nanakuli and Waialua.
[d] Typhus-positive rodents recovered from Hanamaulu, Kaumakani, Koloa, Waimea, Lihue, and Makaweli.

Discussion

Epidemiology

Murine typhus is a zoonotic disease caused by *Rickettsia typhi*. Commensal rats of the genus *Rattus* are the primary reservoirs of *R. typhi*. The oriental rat flea, *Xenopsylla cheopis* (Rothschild), is the principal vector, but the cat flea, *Ctenocephalides felis* (Bouche), has also been found to be naturally infected with *R. typhi*. *C. felis* was found by Azad [7] to be at least equal to *X. cheopis* for the propagation of the rickettsial organism. *C. felis* readily feeds on humans and many alternative hosts, and is generally more abundant in endemic foci. *R. typhi* infects its host through the inoculation of infected flea feces into abraded skin or through mucous membranes. Inhalation of dust containing infectious flea feces may also be responsible for disease transmission.[8]

Since 1972, the number of cases of murine typhus in Hawaii has increased, especially on Maui.[6] The macroenvironment of murine typhus consists of a hot, dry climate with little rainfall. The murine typhus microenvironment includes the intimate life cycle of rodents and their fleas, and an adequate food supply for the rodents. Fleas do not propagate as successfully in wet environments where the soil is damp as they do in dry environments, so few cases of murine typhus occur in areas of heavy rainfall. Ecologic conditions in Hawaii have changed considerably since the end of World War II. Conditions currently influencing rodent-flea cycles have become less dependent on unsanitary housing and overcrowding, and are more dependent on macroenvironment and microenvironment conditions. The most notable ecologic changes included: 1) modern sanitary housing codes requiring rat-proof structures; 2) the encroachment of suburbia on agricultural land; 3) changing agricultural practices such as conversion of farrow to drip irrigation and converstion of sugar cane land to seed corn or other crops; and 4) subtle climatic changes (El niño and global warming) influencing rodent nesting micro-temperature and humidity that favor specific rodent and flea species. A recent article by Chan[9] describes a model for the assessment of climate change and infectious diseases that may be useful for future research related to the ecology of murine typhus in Hawaii.

Disease transmission correlates with specific flea species and flea population size rather than the population of rodents. Certain flea species, especially *X. cheopis* or *C. felis*, are more critical than others for the maintenance of the characteristic rat-flea-rat cycle that enables the transmission of *R. typhi*. Eradication of fleas from a typhus-carrying rodent population theoretically would eliminate the disease in a community.

As a result of the earlier anti-typhus campaign conducted in Hawaii during the late 1940s and early 1950s, the population of the Norway rat, *Rattus norvegicus*, and the oriental rat flea, *X. cheopis*, near human dwellings has dramatically declined. The reduction of both reservoir and vector has been primarily attributed to the implementation of rat-proofing methodologies in new homes and buildings and the emphasis on eliminating rodent harborages in the domestic environment. Most of the earlier literature on murine typhus indicated that the primary reservoir and primary vector was *R. norvegicus* and *X. cheopis*, respectively.[4,7,10,11] Why have the number of cases of typhus increased in the absence of significant numbers of the primary reservoir and vector in and around homes in Hawaii since 1972?

Mohr[4] discussed the similarities between the ecology of murine typhus and murine plague emphasizing the importance of the flea breeding cycle in the perpetuation of both diseases. Classical urban plague involving domestic rodents and the oriental rat flea was self-limiting because the bacteria killed the reservoir and vector, and the disease disappeared within a few years. Sylvatic plague is a zoonoses

perpetuated among true reservoir animals (e.g. groundhogs, marmots, prairie dogs) and their respective flea species. The plague bacillus does not kill its reservoir host, and fleas continue to transmit the organism from host to host. Hawaii did not have a natural sylvatic plague host. However, the plague bacillus in Hawaii persisted for more than 40 years in sugar cane fields in the Hamakua region of Hawaii, and the Makawao region of Maui in the Polynesian rat, *Rattus exulans* (Peale), and the Hawaiian rat flea, *Xenopsylla vexabilis* (Jordan).[13,14] The microenvironments of the ground burrows of the Polynesian rats in the sugar cane fields were ideal for flea breeding.[15] The few human cases of plague that occurred following the urban epidemics probably resulted from accidental exposure to infected rodent burrows in sugar cane fields or from Norway rats or domestic animals (dogs or cats) transporting infected fleas from sugar cane field burrows to adjacent homes. It is postulated that a similar rat-flea-rat cycle for murine typhus may be present in some sugar cane fields or other agricultural setting providing a protected microenvironment for nesting rodents.

Recent studies of murine typhus in California suggest that the classic rat-flea-rat cycle of *R. typhi* have been replaced by a peridomestic animal cycle involving feral cats, dogs, opossums and their fleas. A second typhus group rickettsia, *R. felis*, has been discovered in cat fleas and opossums in southern California and Texas.[16,17] The inappropriate feeding and lack of control of the feral cat population in a community with the unintended increase of both the cat and rodent populations could result in murine typhus outbreaks.

The three West Kauai homes examined by the Vector Control Branch maintained some features of an agrarian lifestyle. Domestic animal food and shelter outside domestic residences attract and support populations of commensal rodents. It is not surprising that typhus-infected *R. rattus* and *R. norvegicus* species were trapped on these properties.

Dust in certain protected rodent harborage areas may contain infectious flea feces for years even after the rodents have been eradicated from the area. This may partially explain why murine typhus cases on Maui and Kauai occur throughout the year. In addition, seed corn has replaced sugar cane as an island crop in many locales on Kauai. Seed corn is a better nutrient source for rodents than is sugar cane. A better food source can sustain a larger rodent population and is postulated to enhance rodent migration to human dwellings when crops are harvested. These occurrences may have collectively increased rodent-flea populations, peridomestic animal-flea populations, and vector-borne disease in the area. Further research is needed to determine if the murine typhus cases on Kauai reflect changing community-wide ecologic conditions on the southwestern coast before it can be concluded that the region has become a hyperendemic area for murine typhus.

Clinical Description

Murine typhus is an acute illness characterized by fever, chills, headache, and myalgias. A diffuse macular or maculopapular rash occurs in 50% of cases, and is usually located on the trunk, arms, legs, and face. If the rash occurs, it is present at the time of the initial physician examination in 18 % of cases. The rash appears six days (range 0 to 18 days) after the onset of fever. Petechiae are noted in ≤ 10% of cases.[5] Respiratory tract symptoms including sore throat and cough can occur, and chest x-ray can reveal pulmonary infiltrates consistent with a pneumonitis. Gastrointestinal symptoms are common and include abdominal pain, anorexia, nausea, vomiting, and diarrhea.[5] Physical examination may reveal hepatomegaly (25% of cases) or splenomegaly (10% of cases).[5,19] Jaundice is uncommon but has been reported in 11% of cases in one series.[20]

Serum aminotransferase levels are elevated three to five times baseline in 90% of cases, and > five-fold in about 25% of patients.[5,20] The peripheral white blood cell count is usually normal, but mild leukocytosis and leukopenia have been reported. Anemia can occur. Mild thrombocytopenia is common, and occurred in 46% of cases in one review. Hypoalbuminemia (89%), hypocalcemia (79%), hyponatremia (60%), and hypoproteinemia (45%) are common serum chemistry abnormalities that reflect the widespread vascular endothelial cell injury from *R. typhi* infection.[5,21]

Most patients with murine typhus require hospitalization. Three of the cases in this review had hypotension requiring fluid resuscitation, and presented with syndromes of shock, sepsis, pneumonitis, unexplained febrile illness, and anicteric hepatitis. The reported complications of murine typhus include renal failure, meningoencephalitis, myocarditis, endocarditis, respiratory failure, hepatic insufficiency, hematemesis, and severe hemolysis when associated with glucose-6 phosphate deficiency or other hemoglobinopathy. Death occurs in 1% to 4% of patients.[5,19-24]

Diagnosis

The Weil-Felix agglutination reaction is non-specific, insensitive, and no longer recommended as a screening or diagnostic test for murine typhus. The diagnostic test of choice for *R. typhi* is the IFA to typhus group antigens. Confirmation of the diagnosis is seen with a fourfold antibody titer rise between acute and convalescent serum samples to a titer of ≥ 1:64. A probable diagnosis can be made within the first week of illness with if single IgM or IgG titer is ≥ 1:128. The IFA test cannot differentiate between *R. typhi* and *R. felis*. Polymerase chain reaction testing is necessary to differentiate these two organisms, but this test is available at only a few research centers.[19,21]

The diagnosis of murine typhus relies upon a high degree of clinical suspicion and the collection of acute and convalescent serology for specific antibody testing. Physicians in Hawaii should consider murine typhus in the differential diagnosis of acute undifferentiated febrile illness, viral exanthem, sepsis, unexplained acute multi-system illness, leptospirosis, acute hepatitis, pneumonitis, and aseptic meningoencephalitis. A history of exposure to rodents or fleas is not always present. The occurrence of fever and rash is suggestive, but the rash is nonspecific and not always present. RMSF can be confused with murine typhus, but RMSF is not endemic to Hawaii. Human ehrlichiosis has a similar clinical presentation, but leukopenia and thrombocytopenia is more significant. Human ehrlichiosis is not endemic to Hawaii. RMSF and ehrlichiosis should be considered in travelers recently returning from endemic areas for those diseases. A concurrent diagnosis of leptospirosis was established in two (40%) of our patients.

Rodents are reservoirs for leptospirosis. Serologic testing for leptospirosis should also be performed whenever the diagnosis of murine typhus is considered.

Treatment

The treatment of choice for murine typhus is doxycycline 100 mg twice a day orally or intravenously continued until 48 hours after fever resolves or for a minimum of five days. Chloramphenicol is the drug of choice in pregnant women, and is prescribed at a dose of 50 mg/kg/day in four divided doses intravenously for the same duration.[19,21] Oral chloramphenicol is not available at the present time in the United States.[21] Relapses have been reported with chloramphenicol. There have also been reports of successful treatment of murine typhus with various quinolone antibiotics such as ciprofloxacin.[25] Because murine typhus can be severe or even fatal, appropriate specific therapy should begin promptly without waiting for serologic confirmation if clinical and epidemiologic clues raise suspicion for this diagnosis. Appropriate antibiotic therapy results in prompt clinical improvement and shortens the duration of fever.[8]

Doxycycline is also effective for mild to moderate cases of leptospirosis. More severe cases of leptospirosis are treated with intravenous penicillin G, ceftriaxone or ampillicin.[26]

Prevention

Prevention is directed toward rodent and flea eradication programs. The DOH must be notified of all murine typhus cases as soon as possible in order to monitor the rodent/flea population and take appropriate action to prevent further disease spread. The DOH Vector Control staff is available for rodent trapping, and flea eradication at exposure sites. People cleaning enclosed areas that may harbor rodents should wear a protective mask or respirator to avoid inhalation of dust containing flea feces. Skin should be protected from flea feces by covering exposed areas with appropriate clothing such as long sleeved shirts, long pants, socks, and shoes, and use of topical insect repellents.

Conclusion

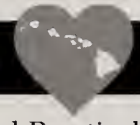
The five cases of murine typhus in southwest Kauai in 1998 are probably the beginning of a new hyperendemic focus of typhus in Hawaii. The changing environmental conditions in this region may result in additional cases in the future. Monitoring of reservoirs and vectors in this region is required in order to determine the timely application of control measures to prevent human disease. Local physicians should be cognizant of the widespread murine typhus reservoirs and vectors in the State, and maintain a high degree of suspicion for the diagnosis of murine typhus in acute undifferentiated febrile illnesses especially with unexplained liver enzyme elevations.

Acknowledgements

Appreciation is extended to Dr. Gerald Tomory, Medical Director of the Kauai Veterans Memorial Hospital, for his facility's cooperation with the Department of Health (DOH) during the investigation of the murine typhus outbreak. We also thank Leroy S. Tangalin Sr., Peggy P. Yamashita from the DOH Kauai District Health Office, and Sandra M. Oshiro, from the DOH Vector Control Branch in Honolulu, for rodent trapping, processing and testing. Grateful appreciation is also extended to John Krebs from the Centers for Disease Control and Prevention for his manuscript review.

References

1. Fennel, EA. Endemic typhus fever in Honolulu. *JAMA* 1934; 102:1135.
2. Doolittle, SE. Endemic typhus fever. Epidemiology and clinical observations of the disease in Hawaii. *Trans 48th Ann Meet Hawaii Terr Med Assoc.* 1938; 127.
3. Doolittle, SE. Endemic typhus fever in Hawaii. *Ann Int Med.* 1941; 14:2091.
4. Mohr, CO. Entomological background of the distribution of murine typhus and murine plague in the United States. *Am J Trop Med.* 1951; 31:355-372.
5. Dumler JS, Taylor JP, Walker DH. Clinical and laboratory features of murine typhus in south Texas, 1980 through 1987. *JAMA.* 1991; 226:1365-1370.
6. Higa, HH, Broadhurst, AM. Prevalence of rodent endemic typhus on the island of Maui. *Hawaii Med J.* 1976; 35(12):366-371.
7. Azad, FA, Traub R, Sofi M, Wisserman CL. Experimental murine typhus infection in the cat flea, *Ctenocephalides felis* (Siphonaptera: Pulicidae). *J Med Ento.*1984; 21(6): 675-680.
8. Traub R, Wisseman C L Jr, and Farhang-Azad A. The ecology of murine typhus-A critical review. *Trop Dis Bull.* 1978; 75 (4): 237-317.
9. Chan NY, Ebi KL, Smith F, Wilson TF, and Smith AE. An integrated assessment framework for climatic change and infectious diseases. *Env Health Perspectives.* 1999; 107(5): 329-337.
10. Cole CL and Koepke JA. Studies of rodent ectoparasites in Honolulu, *T.H., Savannah, Ga., and Dothan, Ala. Public Health Reports Supplement No. 202.* 1947; 25-41.
11. Alicata JE. Parasitic infections of man and animals in Hawaii. *Hawaii Agric Expt Sta Tech Bull No 61.* 1964; 43pp.
12. Herms WB. Fleas. In James MT and Harwood RF eds, *Medical Entomology, 6th Ed.* London. MacMillan Co; 1971:484pp.
13. Ikeda JK. A brief history of bubonic plague in Hawaii. *Proc Hawaiian Ent Soc.* 1985; 25:75-81.
14. Tomich PQ. Mammals in Hawaii. Honolulu, HI: *BP Bishop Mus Spec Pub No. 57.* 1969; 238pp.
15. Haas GE. Quantitative relationships between fleas and rodents in a Hawaiian cane field. *Pac Science.* 1969;23(1):70-82.
16. Higgins, JA, Radulovic S, Schreifer ME, Azad AF. *Rickettsia felis*: A new species of pathogenic rickettsia isolated from cat fleas. *J Clin Microbiol.* 1996; 34:671-674.
17. Azad AF, Radulovic S, Higgins JA, et al. Flea-borne rickettsioses: Ecologic considerations. *Emerg Infect Dis.* 1997; 3:319-327.
18. Silpapojakul K, Chayakul P, Krisanapan S. Murine typhus in Thailand: Clinical features, diagnosis, and treatment. *Q J M.* 1993; 86:43-47.
19. Sexton DJ. Murine Typhus. In: Rose, BD ed, *UpToDate®*,, Wellesley. UpToDate; 1999: Copyright 2000 UpToDate, Inc.
20. Silpapojakul K, Mitarnun W, Ovartlarnporn B, Chamroonkul N, Khow-Ean U. Liver involvement in murine typhus. *Q J M.* 1996; 89:623-629.
21. Dumler JS, Walker DH. *Rickettsia typhi* (Murine Typhus). In Mandel GL, Bennett JE, Dolin R., eds. *Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases. 5th ed.* Philadelphia. Churchill Livingstone; 2000: 2053-2055.
22. Bernabeu-Wittel M Villanueva-Marcos JL, de Alarcon-Gonzalez A, Pachon J. Septic shock and multiorganic failure in murine typhus [letter]. *Eur J Clin Microbiol Infect Dis.* 1998; 17:131-132.
23. Buchs AE, Zimlichman R, Sikuler E, Goldfarb B. Murine typhus endocarditis. *South Med J.* 1992; 85:751-753.
24. Silpapojakul K, Ukkachoke C, Krisanapan S, Silpapojakul K. Rickettsial meningitis and encephalitis. *Arch Intern Med.* 1991; 151:1753-1757.
25. Strand O, Stromber A. Ciprofloxacin treatment of murine typhus. *Scand J Infect Dis.* 1990; 22:503-504.
26. Farr RW. Leptospirosis. *Clin Infect Dis.* 1995; 21:1-8.

Nurses the  *of Healthcare*

Registered Nurses, Licensed Practical Nurses, Medical Assistants

Qualified and experienced in a wide variety of job settings.

All applicants carefully screened and matched to your specific job.

We are fully responsible for payroll, taxes, benefits and insurance.

Kahu Malama Nurses, Inc.

Short & Long Term Staff Relief and Permanent Placement

Serving Hawaii since 1982 *Available 24 hours*

(808) 951-0111 Fax: 949-3834 **Inter-island: 1-800-773-9021**

e-mail: nurses@kahumalama.com

ALL FOR ONE



TRIAZ® (benzoyl peroxide): THE ONE WITH ALL

TRIAZ® *(benzoyl peroxide)* FIGHTS ACNE.

UNIQUELY FORMULATED WITH 3 ADDITIONAL INGREDIENTS:

GLYCOLIC ACID

to exfoliate skin cells that may interfere with acne treatment.

C-12 – C-15 ALKYL BENZOATE

to aid penetration through high affinity for both benzoyl peroxide and sebum.

ZINC LACTATE

to help reduce irritation and the visible signs of inflammation.



AVAILABLE IN:

3% GEL - 1.5OZ ▼ 3% CLEANSER - 6OZ & 12OZ
6% GEL - 1.5OZ ▼ 6% CLEANSER - 6OZ & 12OZ
10% GEL - 1.5OZ ▼ 10% CLEANSER - 3OZ, 6OZ, & 12OZ

TRIAZ: THE ONE WITH ALL

TRIAZ®
(benzoyl peroxide)

Rx Only

DESCRIPTION: TRIAZ® (benzoyl peroxide) 3%, 6%, and 10% Gels and TRIAZ® (benzoyl peroxide) 3%, 6%, and 10% Cleansers are topical, gel-based, benzoyl peroxide containing preparations for use in the treatment of acne vulgaris. Benzoyl peroxide is an oxidizing agent that possesses antibacterial properties and is classified as a keratolytic. Benzoyl peroxide ($C_{14}H_{10}O_4$) is represented by the following chemical structure:



TRIAZ 3% Gel contains Benzoyl Peroxide 3% as the active ingredient in a gel-based formulation consisting of: Water, C12-15 Alkyl Benzoate, Glycerin, Cetearyl 50, Polyacrylamide (and) C12-14 Isoparaffin (and) Laureth-7, PEG-100 Stearate, Steareth S-2, Steareth S-20, Dimethicone 200, Glycolic Acid, Zinc Lactate, Lactic Acid, Disodium EDTA, Sodium Hydroxide.
TRIAZ 6% and 10% Gels contain, respectively, Benzoyl Peroxide 6% and 10% as the active ingredient in a gel-based formulation consisting of: Water, C12-15 Alkyl Benzoate, Glycerin, Cetyl Stearyl Alcohol, Glycolic Acid, Polyacrylamide (and) C13-14 Isoparaffin (and) Laureth-7, Glyceryl Stearate (and) PEG-100 Stearate, Steareth S-2, Sodium Hydroxide, Steareth S-20, Dimethicone, Zinc Lactate, Disodium EDTA.
TRIAZ 3% Cleanser contains Benzoyl Peroxide 3% as the active ingredient in a vehicle consisting of: Glycerin, Petrolatum, C12-15 Alkyl Benzoate, Tauranol I-78, Alfa Olefin Sulfonate, Special Petrolatum Fraction, Zinc Lactate, Carbomer, Potassium Polymetaphosphate, Titanium Dioxide, Triethanolamine, Glycolic Acid, Lavender Extract, Menthol.
TRIAZ 6% and 10% Cleansers contain, respectively, Benzoyl Peroxide 6% and 10% as the active ingredient in a vehicle consisting of: Glycerin, Petrolatum, C12-15 Alkyl Benzoate, Sodium Cocoyl Isethionate, Water, Special Petrolatum Fraction, Sodium C14-16 Olefin Sulfonate, Zinc Lactate, Carbomer, Potassium Polymetaphosphate, Titanium Dioxide, Triethanolamine, Glycolic Acid, Lavender Extract, Menthol.

CLINICAL PHARMACOLOGY: The mechanism of action of benzoyl peroxide is not totally understood but its antibacterial activity against Propionibacterium acnes is thought to be a major mode of action. In addition, patients treated with benzoyl peroxide show a reduction in lipids and free fatty acids, and mild desquamation (drying and peeling activity) with simultaneous reduction in comedones and acne lesions. Little is known about the percutaneous penetration, metabolism, and excretion of benzoyl peroxide, although it has been shown that benzoyl peroxide absorbed by the skin is metabolized to benzoic acid and then excreted as benzoate in the urine. There is no evidence of systemic toxicity caused by benzoyl peroxide in humans.

INDICATIONS AND USAGE: TRIAZ 3%, 6%, and 10% Gels and TRIAZ 3%, 6%, and 10% Cleansers are indicated for the topical treatment of acne vulgaris.

CONTRAINDICATIONS: These preparations are contraindicated in patients with a history of hypersensitivity to any of their components.

WARNINGS: When using this product, avoid unnecessary sun exposure and use a sunscreen.

PRECAUTIONS: General: For external use only. If severe irritation develops, discontinue use and institute appropriate therapy. After reaction clears, treatment may often be resumed with less frequent application. These preparations should not be used in or near the eyes or on mucous membranes.

Information for Patients: Avoid contact with eyes, eyelids, lips and mucous membranes. If accidental contact occurs, rinse with water. Contact with any colored material (including hair and fabric) may result in bleaching or discoloration. If excessive irritation develops, discontinue use and consult your physician.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Data from several studies employing a strain of mice that are highly susceptible to developing cancer suggest that benzoyl peroxide acts as a tumor promoter. The clinical significance of these findings to humans is unknown. Benzoyl peroxide has not been found to be mutagenic (Ames Test) and there are no published data indicating it impairs fertility.

Pregnancy: Teratogenic Effects: *Pregnancy Category C:* Animal reproduction studies have not been conducted with benzoyl peroxide. It is not known whether benzoyl peroxide can cause fetal harm when administered to a pregnant woman or can effect reproduction capacity. Benzoyl peroxide should be used by a pregnant woman only if clearly needed. There are no available data on the effect of benzoyl peroxide on the later growth, development and functional maturation of the unborn child.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when benzoyl peroxide is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: Allergic contact dermatitis and dryness have been reported with topical benzoyl peroxide therapy.

OVERDOSAGE: If excessive scaling, erythema or edema occurs, the use of these preparations should be discontinued. To hasten resolution of the adverse effects, cool compresses may be used. After symptoms and signs subside, a reduced dosage schedule may be cautiously tried if the reaction is judged to be due to excessive use and not allergenicity.

DOSAGE AND ADMINISTRATION: TRIAZ® Gels: Apply once or twice daily to cover affected areas, or as directed by your dermatologist. Use after washing with a mild cleanser, such as one of the TRIAZ Cleansers, and water.

TRIAZ® Cleansers: Wash affected areas once or twice daily, or as directed by your dermatologist. Avoid contact with eyes or mucous membranes. Wet skin and liberally apply to areas to be cleansed, massage gently into skin for 10-20 seconds working into a full lather, rinse thoroughly and pat dry. If drying occurs, it may be controlled by rinsing cleanser off sooner or using less often.

HOW SUPPLIED:
TRIAZ 3% Gel – 1.5 oz. (42.5 g) tube, NDC 99207-209-01.
TRIAZ 6% Gel – 1.5 oz. (42.5 g) tube, NDC 99207-051-01.
TRIAZ 10% Gel – 1.5 oz (42.5 g) tube, NDC 99207-210-01.
TRIAZ 3% Cleanser – 6 oz. (170.3 g) tube, NDC 99207-206-12.
TRIAZ 3% Cleanser – 12 oz. (340.2 g) bottle, NDC 99207-206-09.
TRIAZ 6% Cleanser – 6 oz. (170.3 g) tube, NDC 99207-116-12.
TRIAZ 6% Cleanser – 12 oz. (340.2 g) bottle, NDC 99207-116-09.
TRIAZ 10% Cleanser – 3 oz. (85.1 g) tube, NDC 99207-106-02.
TRIAZ 10% Cleanser – 6 oz. (170.3 g) tube, NDC 99207-106-12.
TRIAZ 10% Cleanser – 12 oz. (340.2 g) bottle, NDC 99207-106-09.

Store at: 15° - 25°C (59° - 77°F).

Covered by US Patents: 5,648,389; 5,254,334; 5,409,706; and 5,632,996.

Manufactured for:
MEDICIS, The Dermatology Company®
Scottsdale, AZ 85258
by: Contract Pharmaceuticals Limited,
Mississauga, Ontario L5N 2B8 CANADA

MEDICIS
The Dermatology Company®

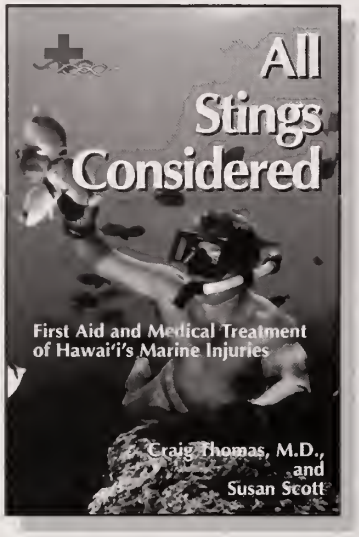
0S101-08M2 4/00

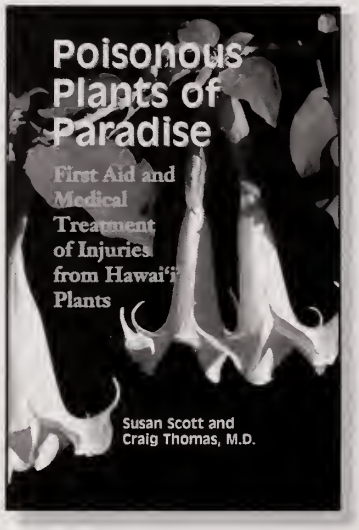
TAZ46699R2

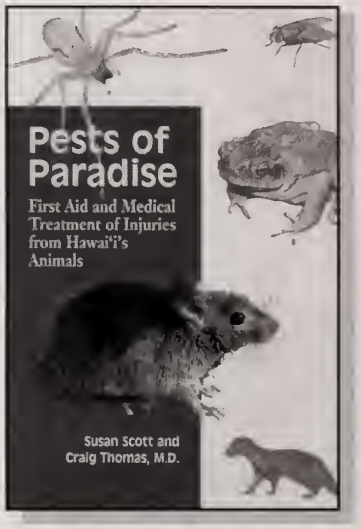
Do you urinate on jellyfish stings?

Drink angel trumpet tea?

Smoke toad skin?







Your patients do.

In the past, reliable information about such subjects was hard to find. Now, with these literature-based books by biologist Susan Scott and emergency physician Craig Thomas, you can look up biology, incidence, traditional uses, first aid and medical treatment of Hawaii's toxic plants and animals. These books, with color photos of each topic, are the only ones of their kind in Hawaii.

"Every doctor in Hawaii should have these books."
Norman Goldstein M.D.

Special offer by University of Hawaii Press:
All 3 books for $49.95.
(Free shipping in Hawaii and North America.)

Single copies:
All Stings Considered $24.95
Poisonous Plants of Paradise (NEW) $19.95
Pests of Paradise (NEW) $19.95

Mail:
UH Press, Order Department
2840 Kolowalu Street
Honolulu, HI 96822

Phone:
808-956-8255 or toll free
888-847-7377
Fax:
808-988-6052 or toll free
800-650-7811

Web site: www.uhpress.hawaii.edu

Fat Embolism, ARDS, Coma, Death: The Four Horsemen of the Fractured Hip

Jerry E. Prentiss MD and Elaine M. Imoto MD

Abstract

The pathophysiology of fat embolism syndrome (FES) is presented in the context of total joint arthroplasty. The current literature is reviewed with recommendations for surgical technique, anesthetic and pulmonary management. Diagnosis is quite difficult but can be established by imaging techniques such as MRI, SPECT, and transcranial Doppler sonography. Early steroid treatment may limit morbidity.

Total joint arthroplasty has become one of the most common orthopedic procedures in the elderly. Approximately 3.8% of the U.S. population have significant osteoarthritis and an estimated 20% will eventually require hip or knee replacement.[1] The complication rate from all causes is about 2%, while mortality in the perioperative period is about 0.1%.[2] One of the most serious and potentially lethal complications of hip replacement is the fat embolism syndrome (FES). Patients who are also at risk for FES are those with multi-trauma injuries, especially with long bone fractures, and those with pathologic fractures from tumors. When these numbers are combined with elective joint procedures in the elderly, it is estimated that as many as 5000 deaths are caused annually by this complication.[3] We report two cases of FES at our institution and review the recent literature concerning recommendations for orthopedic, anesthetic and pulmonary management.

Case 1. An 88-year-old man presented with a left hip fracture after a fall in his retirement home. He denied dizziness or loss of consciousness. Past history was significant for atherosclerotic heart disease including hypertension, previous MI, bypass graft surgery in 1983, and a pacemaker. He also had a long history of chronic obstructive lung disease and dyspnea following minimal exertion. Other history included peripheral neuropathy, previous trans-urethral resection of the prostate for cancer, and glaucoma with recent detached retina. Medications included terazosin, digoxin, tobramycin eye drops and ipratropium and albuterol inhalers. Physical examination was unremarkable except for his hip fracture; lungs were clear and heart sounds normal without murmur or gallop. There was no peripheral edema, organomegaly, or venous distension suggestive of congestive heart failure. He was brought to the operating room for a bipolar hemi-arthroplasty utilizing a Biomet system. Monitoring included automated BP, EKG, pulse oximetry, end tidal CO2, esophageal stethoscope and temperature, and indwelling urinary catheter. General anesthesia was induced with thiopental, fentanyl, isoflurane, and intubation was facilitated with succinylcholine. Muscle relaxation was continued with cis-atracurium. The operative course was smooth until the time of the insertion of the prosthesis. The medullary canal had been reamed with a rigid manual reamer and a 25 mm cement restrictor had been placed distally. The canal was thoroughly irrigated with pulsatile irrigation, and two units (80 grams) of methylmethacrylate cement were placed with an injection gun for pressurization. The prosthetic stem was then inserted into the cement and tapped into position. Approximately ten minutes later Sp02 fell from 98 to 81%, and two minutes after that BP fell from 130/80 to 80/50 mm HG. Ephedrine bolus of 20, then 30 mg had little effect and BP declined further to 60/30 mm Hg. Bolus doses of epinephrine brought pressures back to 140/90 range, but 02 sat remained low at 81-85%. The patient was turned and wound closure was completed in the supine position. Radial artery and pulmonary artery catheters were placed, and norepinephrine infusion was utilized to support BP and cardiac output. Post operative chest film showed bilateral fluffy infiltrates consistent with pulmonary edema. Pressor infusion was changed to dobutamine and furosemide was given. EKG showed a paced rhythm and nonspecific ST- T wave changes. Despite bronchodilators, PEEP ventilation, and inotropic support the patient's condition continued to deteriorate and he expired 2 hours later. No post mortem exam was performed.

Case 2. A 70-year-old man slipped on beach access stairs and sustained a hip fracture. Past history was unremarkable except for a long-standing seizure disorder under treatment with phenytoin. He was admitted in the evening and put at bed rest with traction for the night. Physical exam was negative except for hip fracture; lungs were clear and cardiac exam was normal. The next morning he became febrile and 02 saturation by pulse oximetry was noted to be low. ABG on room air showed a p02 of 45, pCO2 38, pH 7.36, although breath sounds were still clear and there was no complaint of dyspnea. The patient was oriented and cooperative but became increasingly somnolent as the day progressed. He was brought to the OR for left hip arthroplasty on the evening 24 hours following admission. He received a general anesthetic induced with thiopental, fentanyl and midazolam, maintained with isoflurane inhalation and supplemented with a total of morphine 12 mg during the procedure. Reaming and cement injection were carried out as in case one. Approximately four minutes following insertion of the prosthesis stem, the BP transiently fell from 150/90 to 104/65 mm Hg and Sp02 from 98 to 93%. A low dose infusion of epinephrine was utilized for about 10 minutes until pressures returned to stable levels.

In the recovery room the patient awoke appropriately and was able

Correspondence to:
Jerry E. Prentiss MD
888 S. King St.
Honolulu, HI 96813-3009

to follow commands to deep breathe and move his extremities but was otherwise quite somnolent. His 02 saturation on 4 liters by nasal prongs stayed in the 95-98% range. He was transferred to the general floor with nasal 02. Three hours later his 02 sat again fell to 81-86% range, and his level of consciousness decreased. With higher 02 flows his 02 sat remained above 90% but respiratory effort was irregular and he became increasingly less responsive to stimulation, arms were held in flexed position with hands clenched.

Upon transfer to ICU his vital signs remained stable and 02 sats were kept above 95% with continuous positive pressure face mask. Chest X-ray showed mild pulmonary congestion and pulmonary capillary wedge pressure was slightly elevated at 19 mm Hg. A helical chest CT scan revealed only dependent atelectasis bilaterally and a small effusion but no evidence of segmental or subsegmental embolization.

The clinical picture was felt to be consistent with FES with acute respiratory distress syndrome. Petechiae were not seen, however, and urine when it was checked for fat at the end of surgery was negative.

Unfortunately the level of consciousness did not improve. Head CT was negative for infarction or bleeding and repeat 48 hours later was also normal. EEG showed diffuse slow waves consistent with minor epileptiform activity. The phenytoin level was initially found to be low but rose to therapeutic levels with higher dosage.

Post op blood counts were lower than expected from the 400 ml operative blood loss and may have been depressed by fat embolism. Admission Hgb and Hct were 12.2 and 35.8 and decreased to 7.7 and 22.2 respectively. Platelet count decreased from 172,000 to a low of 101,000.

The patient, still comatose and intubated, was transferred by air ambulance to a hospital near his home in California. He recovered very little function, and subsequent MRI was interpreted by his neurologist as consistent with fat embolism syndrome.

Discussion

Both of these cases demonstrate a sequence of events characteristic of FES and myocardial depression from methacrylate. Case number one had little cardiac and pulmonary reserve and a rapid downhill course. Case number two may have had FES from his initial fracture and a repeat insult during surgery. He also had cardiopulmonary depression at the time of cemented long-stem prosthesis but tolerated it reasonably well. His poor outcome may have been due to cerebral FES or post-op hypoxia from evolving pulmonary FES.

Pathophysiology

Fractures that disrupt the medullary cavity are at risk for causing leakage of fat and marrow contents into the general circulation. An unstable fracture site may allow movement of the fracture hematoma and allow marrow components to escape. Early surgical intervention is therefore theoretically advisable, and indeed has been shown to improve outcome.[4] Operative manipulation, and especially long-stem instrumentation with cement, may substantially increase the risk and severity of FES[5] and deserves further discussion below.

Presenting symptoms and signs of FES may be mild and may not even begin for as long as five days post injury. Most often, however, symptoms peak at 24-48 hours. The hallmark is arterial hypoxemia, often accompanied by fever, sinus tachycardia and altered mental status. Petecchiae, usually present over the anterior chest, axilla, and sclerae, develop in about half of patients and fat globules may be present in urine and blood samples. Plain chest X-ray is positive in only 1/3 to 1/2 of patients and then shows a fluffy infiltrate. Ventilation-perfusion scan and helical CT usually demonstrate patchy widespread embolic patterns. EKG may show right heart strain and ischemia.

The hemiarthroplasty surgical technique described in our two cases involves reaming of the femoral medullary shaft with a manual rasp cusped reamer. This procedure loosens the medullary contents, enlarges the cavity, and prepares the bone for introduction of a long-stem prosthesis. The methylmethacrylate cement is injected under pressure with a device similar to a caulking gun and a distal plug limits spread and ensures good penetration of the cement into the interstices of the bone. Mechanical extrusion of air, fat and medullary debris may occur with this maneuver and these elements can be "intravasated" into the blodstream. In a dog model, femoral shaft pressures in greyhounds rose as high as 900 mm Hg with gun injection.[6] In humans pressures up to 300 mm Hg have been measured.[7] Marrow contents and air have been suggested by Doppler ultrasound studies over the femoral veins,[8] and blood samples from PA and venous catheters confirm gross and microscopic particles of marrow, platelet and fibrin aggregates in humans.[9] The methacrylate monomer itself has been shown to be present in blood samples and may contribute to cardiac depression.[10]

Probst[11] studied 20 patients undergoing total hip arthroplasty with trans-esophageal echocardiography (TEE). All subjects demonstrated emboli in the heart. Some were small, consistent with microbubbles of air, and some larger patterns suggested solid material. Segmental wall motion abnormalities (SWMA) occurred in 14 of 20 patients, more commonly during insertion of cemented femoral components. The authors concluded that pulmonary embolism is a frequent occurrence, however most often it presents no clinically significant problem. SWMAs may occur secondary to either PE and/or methylmethacrylate depression.

Medullary fat and debris are swept into the venous bloodstream and reach the pulmonary circulation. Gas exchange is rapidly impaired and SpO2 by pulse oximetry falls precipitously.

Pulmonary arteriolar vasoconstriction raises pulmonary artery pressure and right heart strain ensues. The right heart has a low tolerance to hypertension and may suddenly fail, leading to pulmonary edema and cardiovascular collapse. To make matters worse, approximately 10-30% of patients has a flow patent foramen ovale. As right heart pressures increase and approach left sided pressures, the overlapping membranes of the atrial septum may "float" apart; the foramen ovale opens and allows direct paradoxical embolization into the left atrium. And here emboli cause real trouble. Air emboli into coronary ostia may cause electromechanical dissociation; particulate material may cause myocardial infarction. Emboli to the cerebral arteries may cause a focal stroke.

Fat intravascated into the venous circulation may not be completely filtered by the lungs. In the pulmonary capillaries, some air and fat may traverse the bed, or travel by pulmonary shunts into the systemic circulation. A recent study by transcranial Doppler has documented 8 of 20 subjects with evidence of embolic signals following impaction of a cemented femoral component.[12] The FES

syndrome may therefore extend from ARDS to cardiac and CNS complications as well.

Twelve hours to 3 days later, fat emboli trapped in the lung microvasculature cause more disruption that can be accounted for by simple mechanical obstruction. In response to the fat, the pulmonary parenchyma secretes lipase which hydrolyzes the non-toxic neutral fat into free fatty acids and glycerol.[13] These chemically toxic metabolites cause alveolar injury, increased capillary permeability, and damage to lung surfactant leading to ARDS.[14] A similar pathological response may take place in the cerebral cortex.[15]

The diagnosis of cerebral fat embolism can be difficult to make since the signs of CNS depression are nonspecific and may be due to embolism from clot, air or particulate matter. Hypoxia secondary to altered lung function, depression from pain medication or anesthetic drugs, or decreased cerebral function in a stressed elderly person (sundowner syndrome) may further cloud the issue.

Recently developed imaging techniques may help to establish the diagnosis: magnetic resonance imaging (MRI), transcranial Doppler sonography, and single photon emission computed tomography (SPECT).[16 17] The neurological dysfunction can be quite severe, as we report in Case 2, and may exceed the level of respiratory distress. The mechanism is not well understood. Two theories have been proposed to explain the brain injury: (1) the mechanical theory, in which fat globules obstruct flow in cerebral vessels, and (2) the toxic theory, in which toxic free fatty acids are released and induce endothelial damage and enhance vascular permeability.[18] Small lesions may produce transient perivascular edema with subsequent full recovery. Larger lesions may cause petechial hemorrhage and irreversible infarction.

Orthopedic Management

Patterson[19] and Ereth[20] have enumerated several considerations in surgical technique. The first concern is the choice of prosthesis used for implantation. If a long-stem femoral component is indicated, the tendency is toward the use of a non-cemented prosthesis. The length of the femoral stem should be minimized. Careful preparation of the femoral canal should first be carried out with rigorous irrigation and suctioning of clot, debris and medullary fat. Pressurization is a part of modern cement technique to improve implant/bone bonding and reduces the incidence of loosening and later need for revision, but over-pressurization must be avoided. Several modifications of technique have been suggested to avoid excessive pressures in the medullary canal: (1) elimination of the cement-restrictor plug in the distal shaft, (2) packing of cement rather than gun injection, (3) retrograde injection around a seated component, and (4) placement of a 0.6 cm (one-quarter-inch) venting hole distal to the femoral isthmus. Additional safeguards are overdrilling the size of the femoral shaft,[21] venting the femoral shaft with an evacuation catheter,[22] and utilization of a prosthesis design with a fluted stem.[23]

Once all precautions have been taken and the cement and long-stem prosthesis are put in place, the moment of truth arrives. It is then incumbent upon the anesthesiologist to monitor, detect, and treat complications should they arise.

Anesthetic Management

Prevention is the most desired endpoint if alterations to orthopedic technique are instituted to improve safety. From the numerous reports of cardiac arrest in the literature,[24 25 26 27 28 29 30 31 32 33 34] it is clear that the fully developed syndrome of pulmonary embolism when combined with methacrylate myocardial depression portends a catastrophic intraoperative event. This has been termed "the cement implantation syndrome."[35]

Table 1.— Implant Precautions (**after Patterson**)

- Non-cemented prosthesis
- Minimize length of stem
- If cement used, avoid over-pressurization of cement in medullary canal
  - -omit distal cement restrictor plug
  - -venting hole in bone
  - -overdrill size in medullary shaft
  - -venting catheter
  - -retrograde injection or "packing" of cement
  - -fluted long-stem component

Lesser manifestations, however, are likely to be commonly encountered and anesthetic techniques can be attuned to discover early warning signs and cope with the ensuing events.

Either spinal or general anesthesia is acceptable. Spinal has gained popularity in recent years for its numerous advantages: lowered blood loss, less post-op DVTs, hypotension attenuated by sympathectomy, and excellent intraoperative protection from the stress of surgical pain. However, if problems arise with oxygenation or breathing, intubation in the lateral position may be difficult.

Combining spinal or epidural with light general anesthesia offers the advantages of both techniques. Epidural may offer additional benefit of providing analgesia into the post-operative period with both local anesthetic agents and epidural narcotics. There is added risk, however, of injury to the spinal cord from hematoma if coagulation derangement is encountered. Also technical difficulties in moving patients with fractures and in placing catheters in elderly patients with arthritic spine changes and spinal stenosis must be weighed. Standard monitoring should include blood pressure cuff, EKG, pulse oximetry, end-tidal C02, esophageal stethoscope, temperature, and urinary bladder catheter.

Higher risk joint procedures include primary total hip for metastatic cancer or bone tumor, revision of a total hip, bilateral total knee, and primary total hip or knee with a cemented long-stem component.[36] These usually merit invasive monitoring with large bore central venous access and a radial artery catheter. Swan-Ganz catheters have well documented value but add risk of their own, such as pulmonary artery rupture and infection. Some authors use them routinely to monitor for PE and to assess risk for proceeding with a second total knee implant[37,38], others reserve them for specific cardiac indications. Trans-esophageal echo (TEE) is a newer noninvasive monitor which may provide early warning information with less risk.

Rescue drugs must of course be immediately at hand and drips must be pre-mixed and ready to infuse. Waters in a dog model found calcium and atropine the best drugs to reverse methylmethacrylate depression.[39] Patterson's group routinely begins low dose epinephrine infusion at the time of the placement of cement and prosthesis. Post-operative monitoring should include pulse oximetry for high risk cases to be alert for hypoxemia in early FES.

Table 2.— Techniques and Monitoring (**after Enneking**)		
Orthopedic techniques	Anesthesia techniques	Monitoring
Low Risk		
Percutaneous pins ORIF with compression screw and side plate Non-cemented prosthesis	Spinal or epidural or general anesthesia	Non-invasive BP, EKG, CO2, Sp02, temperature
High Risk		
Above with heart or pulmonary disease Presence of cancer or tumor Long-stem component with cement Bilateral total knee	General with/without epidural or spinal	Above plus arterial line and CVP Possible Swan-Ganz or TEE

Pulmonary Management

The pulmonary service is frequently consulted to optimize management of patients at risk of FES. The triad of hypoxia, fever, and mental changes warrants careful evaluation as no definitive laboratory or X-ray test exists for diagnosis.[40,41] To eliminate the more common sources of thrombotic PE, duplex scan of pelvic and lower extremity veins is often a first step. Plain chest films may be helpful but ventilation-perfusion scan or helical CT gives more information. Pulmonary angiography may be indicated in the presence of significant PE from thrombi, and inferior vena cava filters are sometimes a lifesaving intervention when pelvic clots are present.

A number of drugs have had their day in the treatment of FES: ethanol, heparin, low-molecular-weight dextran, and hypertonic glucose.[42] Only steroids however, have demonstrated an improvement in outcome. A prospective, double-blind randomized study of trauma patients at high risk for FES found a dose of methylprednisolone 7.5 mg/kg every 6 hours for 3 days to be effective in prevention of the syndrome.[43]

The mechanism, although still unproven, may be preservation of vascular integrity, stabilization of granulocytic lysosomal membranes, retarding of platelet aggregation, and minimizing the transudation of interstitial fluid.

Timing of surgery for a fractured hip is also an important consideration. In general terms, the axiom that the patient is most healthy and has the most physiologic reserve at the time he enters the ER still holds true. But in the real world in which we live, other considerations intervene: access to an operating suite, availability of a skilled surgeon and staff, the need for consultations from specialists, and time needed for studies all must be taken into account.[44] When considering early stabilization of a hip fracture, there also may well be a background of fat embolism and a nadir of pulmonary function for which the team must be ever alert. FES has an incidence in hip and knee surgery as high as 14%, and of those patients 10-20% may die or suffer significant neurological impairment.[45] For the survivors, FES is a self-resolving illness and the mainstay of treatment is respiratory support.[46]

Conclusion

FES occurs as a consequence of multi-trauma, long bone fracture, or total joint arthroplasty. Surgical technique has been modified to reduce the incidence, especially when long-stem cemented components are used. Anesthetic techniques are geared to early discovery and management of cardiac and pulmonary depression. Cerebral involvement is best diagnosed by MRI and SPECT. Early treatment with steroids can be considered in certain settings.

Commentary

Dr. Gerald Mayfield
Straub Clinic Orthopedics

Fat embolism syndrome causing death, especially in the patient undergoing elective reconstructive surgery, is traumatic to all concerned: patient, family and surgeon. This review article appropriately considers both the orthopedic technical and the anesthesia factors involved in detecting and preventing FES in the acute fractured hip patient. In the case of an emergency the surgeon and anesthesiologist are limited to a certain extent in the pre-operative evaluation and prophylactic treatment. This is especially true with elderly (frequently high medical risk) patients who do not improve their medical status by delaying surgery.

Elective reconstructive surgery of the hip and knee allows a time frame that can be utilized to decrease the risk of FES. The literature review and my personal observation confirm that a pre-operative compromised pulmonary function increases the risk of fatal FES. Controversy exists concerning the safety of doing simultaneous bilateral total knee replacements, with decreased cost, versus staged knee replacements. The data indicates increased risk of FES in simultaneous knee replacements. A thorough pulmonary evaluation, including functional testing, would help make the decision to proceed with simultaneous bilateral knee replacements.

Increased intramedullary pressure during instrumentation does introduce fat and other particulate matter into the venous system, to the lungs and often the brain. Using sharp fluted reamers, fluted intramedullary alignment rods and decreasing the pressure in the canal during the procedures should always be considered. However the surgeon should not sacrifice optimum technique in trying to decrease the risk of FES.

References

1. Ritter MA. Point/Counterpoint: Simultaneous knee replacement is better for the patient. *Orthopedics* 1998; 21:417-18.
2. Ereth MH, Weber JG, Abel MD. Cemented versus noncemented total hip arthroplasty-embolism, hemodynamics and intrapulmonary shunting. *Mayo Clin Proc.* 1992; 67:1066-74.
3. Pellegrini VD, Evarts CM: The fat embolis syndrome. In: Evarts CM (ed): *Surgery of the Musculoskeletal System, 2nd ed., vol. 1.* New York: Churchill Livingstone, 1990:37-54.
4. Pelligrini VD, *ibid.*
5. Patterson BM, Healy JH, Cornell CN, Sharrock NE. Cardiac arrest during hip arthroplasty with a cemented long stem component: a report of seven cases. *J Bone Joint Surg.* 1991; 73-(A): 271-7.
6. Kallos T, Enis JE, Gollan F, Davis JH. Intramedulary pressure and pulmonary embolism of femoral contents in dogs during insertion of bone cement and a prosthesis. *J Bone Joint Surg* (Am Vol). 1974; 56:1363-7.

7. Tronzo RG, Kallos, Tamas, Wyche MQ. Elevation of intramedullary pressure when methylmethacrylate is inserted in total hip arthroplasty. *J Bone Joint Surg* (Am Vol). 1974; 714-18.
8. Herndon JH, Bechtol CO, Crickenberger DP. Fat embolism during total hip replacement. A prospective study. *J Bone Joint Surg* (Am Vol). 1974; 55:1350-62.
9. Modig J, Busch C, Olerud S, Saldeen T, Waernbaum G. Arterial hypotension and hypoxaemia during total hip replacement: the importance of thromboplastic products, fat embolism and acrylic monomers. *Acta Anaesthesiol Scand.* 1975; 19:28-43.
10. Homsy CA, Tullos HS, Anderson MS, Diferrante NM, King JW. Some physiologic aspects of prosthesis stabilization with acrylic polymer. *Clin Orthop.* 1972; 83:317-28.
11. Probst JW, Siegel LC, Schnittger I, Foppiano L, Goodman SB, Brock-Utne, JG: Segmental wall abnormalities in patients undergoing total hip replacement: correlations with intraoperative events. *Anesth Analg.* 1993; 77:743-49.
12. Edmonds CR, Barbut D, Hager D, Sharrock NE. Intraoperative cerebral arterial embolization during total hip arthroplasty. *Anes* 2000; 93:315-8.
13. Dines DE, Burgher LW, Okazaki H. The clinical and pathological correlation of fat embolism syndrome. *Mayo Clin Proc.* 1975; 50:407-11.
14. Renaldo JE, Rogers, RM. Adult respiratory distress syndrome: changing concepts of lung injury and repair. *N Eng J Med.* 1982; 306:900-9.
15. Moylan JA, Birnbaum M, Katz A, Everson MA. Fat emboli syndrome. *J Trauma.* 1976; 16:341-7.
16. Kawano Y, Ochi M, Hatashi K, et al. Magnetic resonance imaging of cerebral fat embolism. *Neuroradiology.* 1991; 33:72.
17. Satoh H, Kurisu K, Ohtani M, et al. Cerebral fat embolism studied by magnetic resonance imaging, transcranial Doppler sonography, and single photon emission computed tomography: case report. *J Trauma: Injury. Infection, Crit Care.* 1997; 43(2):345-8.
18. Satoh H, *ibid.*
19. Patterson BM. *op.cit.*
20. Ereth MH. *op.cit.*
21. Ries MD. Bilateral total knee replacement is relatively safe but carries risk. Point/Counterpoint *Orthopedics.* 1998; 21:414-416.
22. Sherman RMP, Byrick RJ, Kay JC, Sullivan TR, Waddell JP. The role of lavage in preventing hemodynamic and blood-gas changes during cemented arthroplasty. *J Bone Joint Surg* (Am Vol). 1983; 65A: 500-6.
23. Sharrock NE, Saverese JJ. Anesthesia for orthopedic surgery. In Miller RD, eds., *Anesthesia*. New York: Churchill Livingstone, 1990; 1956-64.
24. Michelinakis E, Morgan RH, Curtis, PJ. Circulatory arrest and bone cement. (letter) *Br Med J.* 1971;3:639.
25. Cohen CA, Smith TC. The intraoperative hazard of acrylic bone cement: report of a case. *Anesthesiology.* 1971; 35:547-9.
26. Herndon JH. *op.cit.*
27. Coventry MB, Nolan DR, Ilstrup DM. 2012 total hip arthroplasties: A study of postoperative course and early complications. *J Bone Joint Surg.* 1974; 56A:273-84.
28. Byrick RJ, Forbes D, Wadell JP. A monitored cardiovascular collapse during total knee replacement. *Anesthesiology.* 1986; 65:213-6.
29. Sharrock NE. *op.cit.*
30. Patterson BM.*op.cit.*
31. KimYC, Cho MS, Kim SS, Kim SY, Lee YG, Kim TH, Jung SR. Profound hypotension following insertion of methyl methacrylate during bipolar endoprothesis in a patient with long-term levo-dopa treated paralysis agitans. *J Korean Med Sci.* 1995; 10(1):31-35.
32. Enneking FK: Cardiac arrest during total knee replacement using a long- stem prosthesis. *J Clin Anes.* 1995;7:253-263.
33. Pietak S, Holmes J, Mathews R, Petrasek A, Porter B. Cardiovascular collapse after femoral prothesis surgery for acute hip fracture. *Can J Anaes. 1997.* 44(2): 198-201.
34. Duncan JAT. Intra-operative collapse or death related to the use of acrylic cement in hip surgery. *Anaesthesia.* 1989; 44:149-53.
35. Rinecher H. New clinicco-pathophysiological studies on the bone implantation syndrome. *Arch Orthop Trauma Surg.* 1980; 97:263-74.
36. Enneking FK. *op.cit.*
37. Patterson BM. *op.cit.*
38. Dorr LD, Merkel C, Mellman MF, Klein I. Fat emboli in bilateral total knee arthroplasty: predictive factors for neurological manifestations. *Clin Ortho and Related Research.* 1989; 248:112-19.
39. Waters W, Baran KP, Schlosser MJ, Mack JE, Davis WM. Acute cardiovascular effects of methrylate monomer: characterization and modification by cholinergic blockade, adrenergic stimulation and calcium chloride infusion. *Gen Pharmacol.* 1992; 23(3):497-502.
40. Richards RR. Fat embolism syndrome. *Can J Surg.* 1997; 40(5): 334-9.
41. Johnson MJ, Lucas GL. Fat embolism syndrome. *Orthopedics.* 1996; 19:1, 48-9.
42. Pellegrini VD. *op.cit.*
43. Schonfeld SA, Ploysongtang Y, Diliso R, Crissman J, Miller E, Hammerschmidt DE, Jacob HS. Fat embolis prophylaxis with corticosteroids. A prospective study in high risk patients. *Ann Intern Med.* 1983; 99:438-43.
44. Pellegrini VD. *op.cit.*
45. Dorr LD. *op.cit.*
46. Jacobson DM, Terrance CF, Reinmuth OM: The neurologic manisfestations of fat embolism. *Neurology.* 1986; 86:847-51

Aloha Laboratories, Inc.
...When results count

CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

David M. Amberger, M.D.
Laboratory Directory

Phone: (808) 842-6600
Fax: (808) 848-0663
E-Mail: results@alohalabs.com
http://www.alohalabs.com

Professional Money Management Services No Longer a Luxury

No one can be the best at everything. That's why we turn to doctors, lawyers and countless other professionals to provide expertise in vital areas of our lives. The same is true when managing investable assets.

Morgan Stanley Dean Witter Advisors offers customized money management services for individual and institutional accounts starting at $100,000. A Morgan Stanley Dean Witter Financial Advisor, along with an investment specialist, will work closely with you to develop a strategy suited to your goals and objectives.

To find out more, call the number below today.

Gwen Pacarro, CIMA
Sr. Vice President, Financial Advisor

Gary Pacarro
Financial Advisor

Pacific Tower, Suite 1600
1001 Bishop Street
Honolulu, HI 96813
(808) 525-6048

MORGAN STANLEY DEAN WITTER

Morgan Stanley Dean Witter is a service mark of Morgan Stanley Dean Witter & Co. and services are offered through Dean Witter Reynolds Inc., member SIPC. © 2000 Dean Witter Reynolds Inc.

Continued from p. 5

fact that educators desire more information on the health needs of the children they teach.[4]

In many areas of their education, student-physicians at JABSOM have innovative learning opportunities. This is also true around children with disabilities. With these training opportunities, student-physicians are more comfortable with their future crucial roles in supporting families who have children with disabilities. These future physicians are more experienced in collaborating with school and EI program personnel. This exciting curriculum, pioneered at JABSOM and in the State of Hawaii, is proudly being disseminated nationally.

Note: Activities described in this report are supported by a grant from the Office of Special Education and Rehabilitative Services, US Department of Education, "Coordinating Health Services under IDEA: A Training Program for Medical Students and Pediatric Residents" #H029G70245. Appreciation is extended to the State of Hawaii Department of Health (Ruth K. Ota, R.N., M.P.H. and Marge Wada CCC-SLP) and the State Department of Education (Gloria Kishi Ph.D.) for their collaboration in this project.

References

1. Liptak G.S. The role of the pediatrician in caring for children with developmental disabilities: Overview. Pediatric Annals 1995; 24(5):232-237.
2. Sneed R.C, May W.L, and Stencel C.S. Training of pediatricians in care of physical disabilities in children with special health care needs: Results of a two-state survey of practicing pediatricians and national resident training programs. Pediatrics 2000; 105 (3): 554-561.
3. Charney E. Medical education in the community: The primary care setting as laboratory and training site. Pediatric Annals 1994; 23(12):664-668.
4. Krier J.J. Involvement of educational staff in the health care of medically fragile children. Pediatric Nursing 1993; 19 (3): 251-254.

WE COLLECT PAST DUE ACCOUNTS

Only 25%* fee for Health Care Firms!

Why give up more!

Wood & Tait

HI Collection & Detective Agency
Staff on Kauai, Oahu, Maui, & Hawaii
http://www.woodtait.com

739-0433

jwood@woodtait.com

*Applies to accounts assigned during this promotion; no restrictions as to dollar size or age of accounts. Fee will increase to 50% if litigation or forwarding required; you will receive a contract.

Schering/Key Pharmaceutical

Claritin-D 12 Hour
(5 mg loratadine/120 mg pseudoephedrine sulfate, USP)
Extended Release Tablets

Claritin-D 24 Hour
(10 mg loratadine/240 mg pseudoephedrine sulfate, USP)
Extended Release Tablets

Claritin RediTabs
10 mg (loratadine rapidly-disintegrating tablets)

Claritin Syrup
(loratadine) 10 mg per 10 mL

Once-a-day nasonex (mometasone furoate monohydrate) Nasal Spray, 50 mcg

Claritin 10 mg (loratadine)

Tequin gatifloxacin

Schering **Velvet Agena-Chee**
Senior Sales Representative
Voice Mail (800) 782-2347
Box 3858

Schering **Donn keoki Arizumi**
Pharmaceutical Representative
Voice Mail (800) 544-5420
Box 8058

KEY **Shawn Brady**
Sales Representative
Telephone (808) 387-1409
Voice Mail (800) 554-5420
Box 1342
FAX (808) 373-1772
E-Mail shawn.brady@spcorp.com

Schering **Mark Buquoi**
Sales Representative
Telephone (808) 384-3862
Voice Mail (800) 544-5420
Box 9795
FAX (808) 841-6105

Schering **Dennis M. Hamamura**
Senior Pharmaceutical Rep.
Telephone (808) 671-0225
Voice Mail (800) 544-5420
Box 8774
FAX (808) 671-0817

KEY **Carol K. Honda**
Sales Representative
Voice Mail (800) 554-5420
Box 8322
FAX (808) 593-1776

Schering **Rachelle Hyde**
Sales Representative
District Trainer
Voice Mail (800) 782-2347
Box 3861

KEY **Caroline Perry**
Sales Representative
Voice Mail (800) 554-5420
Box 1274
E-Mail Caroline.perry@spcorp.com

Schering **Brian Souza**
District Account Representative
Telephone (808) 394-9475
Voice Mail (800) 554-5420
Box 6811
FAX (808) 394-9475
E-Mail brian.souza@spcorp.com



Hospice Hawaii &
The Queen's Medical Center
present

Dr. Ira Byock

Caring For Our Patients
As They Die

Friday, February 23, 2001
8 a.m.
Kamehameha Auditorium
Queen's Medical Center

Dr. Ira Byock, a palliative care physician and advocate for improved end-of-life care, is a Past President of the American Academy of Hospice and Palliative Medicine. His research contributed to the Missoula-VITAS Quality of Life Index, which is a tool for measuring the quality of life at the end of life, and he is the author of *Dying Well: The Prospect for Growth at the End of Life.*

HOSPICE HAWAII AT HOME

For more information, please call 924-9255.

THE QUEEN'S MEDICAL CENTER

YOU'VE WAITED YOUR
WHOLE LIFE
DON'T WAIT
ANY LONGER

SAVE THOUSANDS OF DOLLARS BY SELECTING YOUR STEINWAY BEFORE THE DECEMBER FACTORY PRICE INCREASE

You've always dreamed of the day when the incomparable sound of a Steinway would fill your home. And now your moment has arrived.

Before the Factory Price Increase, you can save thousands of dollars on the entire line of hand-made Steinway pianos. We urge you to visit us before this rare opportunity passes you by.

Steinway Pre-Factory Price Increase Savings Opportunity...

Act Now And Save Thousands Selecting A New Steinway or Boston Piano.



SANDERS PIANO
946-6500
1500 S.KING STREET

Classified Notices

To place a classified notice:

HMA members.–Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.

Nonmembers.–Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Physician Wanted

BIG ISLAND OF HAWAII– Multi-specialty group practice seeking BC/BE OB/Gyn to service community of 35,000+; in breathtaking upcountry setting. Waimea is 15-20 minutes from beautiful uncrowded beaches and world class golf courses. Various start-up options available with partnership potential. Contact Linda (808) 885-9606 or fax (808) 885-9506. Aloha!

Locum Tenens

LOCUM TENENS– Board certified Family Practice physician available to cover outpatient care starting January 2001 for physicians going on vacation or conferences. Please contact Dr. Vicente S. Ramo at 839-9822.

Office Space

OFFICE SPACE– Medical office at Ala Moana Building available to sublet or share. Full or part time. Furnished or unfurnished. Free parking for patients. Oceanview. Please leave message at 255-6368.

GET IN THE SWIM



MDA
summer camps for
kids are fun and free!

MDA
Muscular Dystrophy Association
1-800-572-1717 • www.mdausa.org

PHOTO PARADE · EDDIE ADAMS

The Weathervane Russell T. Stodd MD

Homer Is Dead, So Is Lincoln, And I'm Not Feeling So Good Myself.

On August 10th in Florida, Georges El-Bahri, M.D. the chair of the Florida Board of Medicine, called a "temporary halt" to office-based general anesthesia surgery (conscious sedation?). Dr. El-Bahri cited 20 adverse incidents reported to the state since April when new office-surgery rules went into effect, including five deaths resulting from office surgery (four involving cosmetic surgery). The state sent out certified letters to an estimated 600 physicians who could be impacted, and surgeons are scrambling to get operating space in hospitals or licensed outpatient surgical centers. Patients will face delays for surgery and will likely pay more for both cosmetic and non-cosmetic procedures. Some surgeons are in economic peril, and many have cut staff or even been forced to close the office. The actions followed a change in reporting rules related to a Fort Lauderdale *Sun Sentinel* newspaper story stating that at least 34 patients had died following cosmetic surgery in Florida since 1986, and later confirmed 11 more deaths, 9 involving office cosmetic surgery.

I Have Seen The Truth And it Makes No Sense.

Congresspersons did their usual posturing and oratory after the Institute of Medicine (IOM) gave out its controversial report on medical errors. Several Senators from both sides of the aisle - Arlen Specter (R), Tom Harkin (D), Charles Grassley (R), Joseph Lieberman (D) Bob Kerrey (D) and Richard Bryan (D) - rushed forward with bills proposing a mandatory reporting system. Before any irrational action could take place, Senate hearings revealed some of the holes in the IOM report, and the defects of a one-size-fits-all mandatory system on the entire health care field. A fairly reasonable bill, the Patient Safety and Errors Reduction Act, introduced by Senator Jeffords of Vermont is pending. Responsibility will fall on the Agency for Healthcare Research and Quality (AHRQ) to maintain a data base of voluntary reporting of medical errors which would only be used for research purposes. The information will remain confidential and cannot be subpoenaed or used as evidence in any legal proceeding.

The Difference Between A Vacuum Cleaner And An HMO Exec Is That You Have To Plug In The Vacuum Before It Sucks.

The stocks of many mainland HMOs tumbled last year. Earnings decreased and many have refused to contract for Medicare patients. According to *Corporate Research Group*, stock prices of 17 publicly traded HMOs fell 15% in 1999, yet their CEOs were paid an average of 14% more. Cigna chairman Wilson Taylor took home a cool $7.5 million, and William McGuire, M.D. an internist CEO at United Health Group, struggled along with $4.8 million. At the bottom of the list was United American Healthcare's Gregory Moses, Jr. who had to survive with $325,000. No question, managed care really works well for a few, but not for patients or doctors, of course.

The Ultimate Question - With No Answer And No Solution.

A frightening medical accident occurred at Tulane University Hospital in March. Brain surgery was carried out on a patient who subsequently died. At autopsy in May the patient was found to have Creutzfeldt-Jakob disease (CJD), the deadly and mysterious ailment which has no known cure and can only be diagnosed after death. CJD, linked to "mad cow" disease, can incubate for years. Once established, the disease progresses through early signs of depression and personality changes, on to muscle spasms, dementia and death. Since 1974 it has been known that surgical instruments can transmit the disease when a patient contracted CJD with an eye operation. Hospital officials were faced with the horrifying reality that the instruments had been used, laundered, sterilized and reused for eight subsequent surgical patients. After some delay, the university contacted all eight patients. But what now? These patients must feel like they are carrying a time bomb. HCA-Healthcare Co., the hospital chain that owns Tulane University Hospital and Clinic, is vulnerable for extraordinary liability damages.

We Are Going Down The Same Road In Different Directions.

Anyone cruising the interstate highways these days knows there is a growing problem of "road gators" - strips of tire tread and steel belts left behind by disintegrating radial tires. The problem is getting worse. The volume of tire debris increased by 28% between 1995 and 1998. This is much more than a Ford or Firestone problem. A study by the American Trucking Assn. found the rubber wreckage comes from vehicles of every size and description, and there aren't enough Ford Explorers with Firestone tires in the universe to account for it. Heat is the primary culprit in tread-belt separations, and heat increases with speed, as does centrifugal force. Under-inflated tires run hotter because lacking air, the tire body rolls along with more friction, leaving a bigger footprint in the road. However, SUV drivers like the squishy ride of a softer tire. Moreover, drivers are going faster. In fact, 80% of the Firestone tread separations occurred in four high-speed, hot-weather states. In California the number of drivers cited for exceeding 100 mph has doubled in the last decade. And why not? Today's well-engineered, seat belt and air bag equipped vehicles feel safe going 85 mph on any straight and level road. So, the problem is larger than Ford-Firestone, and cannot be laid to a quality control factor at a single plant in Decatur, Illinois. As usual in the vast majority of motor vehicle debacles, the real problem is the loose nut behind the steering wheel.

Taxation Without Representation Was Tyranny, But It Was A Lot Cheaper.

Who said life was fair? Not Al Gore. According to new IRS statistics posted in Congress's Joint Economic Committee, the top 1% of income earners that candidate Gore is abusing with deprecating tone, actually paid 35% of all federal personal income taxes for 1998, up from 33% for 1997. For 1998, the bottom half of taxpayers paid 4% of the income-tax tab, about the same as each of the past few years. To rank in the top 1% you had to report gross income of $269, 496, and the top 5% reported income of $114,729, while to rank in the top 10% you had to report $83,220. These data do not include Social Security and Medicare taxes.

Sometimes Human Existence Is A Colossal Bore.

In Hollywood, Mecca for cosmetic trends, the hottest gimmick to hit the beautification market since the thigh butterfly, is eyebrow shaping. Spend about ten to 30 minutes behind a diaphanous screen, and for $40 a pop your eyebrows can be reshaped into a Cher look-alike, or whatever. Debates are raging over plucking techniques, whether to use eyebrow wax, and how to use tweezers. Yes, and you can now purchase a coffee-table book "The Eyebrow." Stencils are available with exotic names such as "The Marilyn," "The Pamela," and "The Brooke." Twenty percent of the customers are male, as men are getting into salons looking to tame unruly cilia, and perhaps request the Jack Nicholson or Tom Selleck look. Makeup companies have come out with a raft of brow products, e.g. $25 Brow Pomade, $35 After Tweeze Cream, et cetera. Geez, is this narcissism gone crazy, or what?

Sure, You Love Me Before The Big Game, But Will You Respect Me In The Morning?

Historically, coaches have been telling their athletic teams that sex preceding a physical challenge will reduce the game performance. Not so, according to London Marathon. A survey revealed that people who have sex before running a marathon tend to have as much or more spunk than abstainers. On average, those who have sex before running claimed to have better racing times than those who did not. The survey further revealed that fully half of respondents said running had no effect on their sex life, 30% said jogging improved it, while only 8% said it made sexual performance worse.

ADDENDA

❖ On September 10, 1885, Dr. Herman Mules created the first glass eye for a patient whose eye he had just eviscerated.

❖ People with heart disease are 2.3 times more likely to have a heart attack when they are angry.

❖ Prohibition of alcohol went into effect October 1920 and lasted until 1933, considered by many to be the longest 13 years in American history.

❖ Bagpipers always walk when they play, trying to get away from that rotten noise.

Aloha and keep the faith —rts■

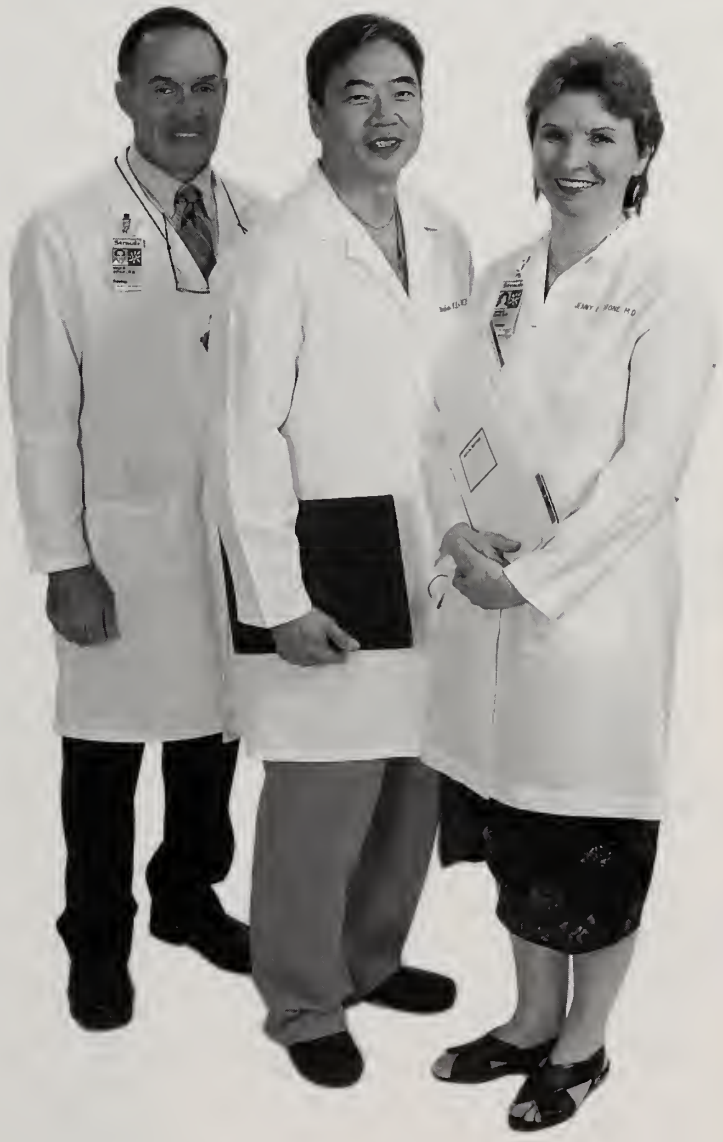
Contents of this column do not necessarily reflect the opinion or position of the Hawaii Ophthalmological Society. Editorial comment is strictly that of the writer.

Our pledge to you

As Straub physicians, we welcome your referrals... and pledge to:

- Report our evaluation to you promptly by phone, fax or mail (whatever you prefer).
- Never make secondary referrals without your approval.
- Always direct the patient back to you for continuing care.

To make your referrals easy, we have a Physician Referral Specialist, Kym Kaohi. To contact Kym and to get a binder on Straub specialists and services, call 522-4444.

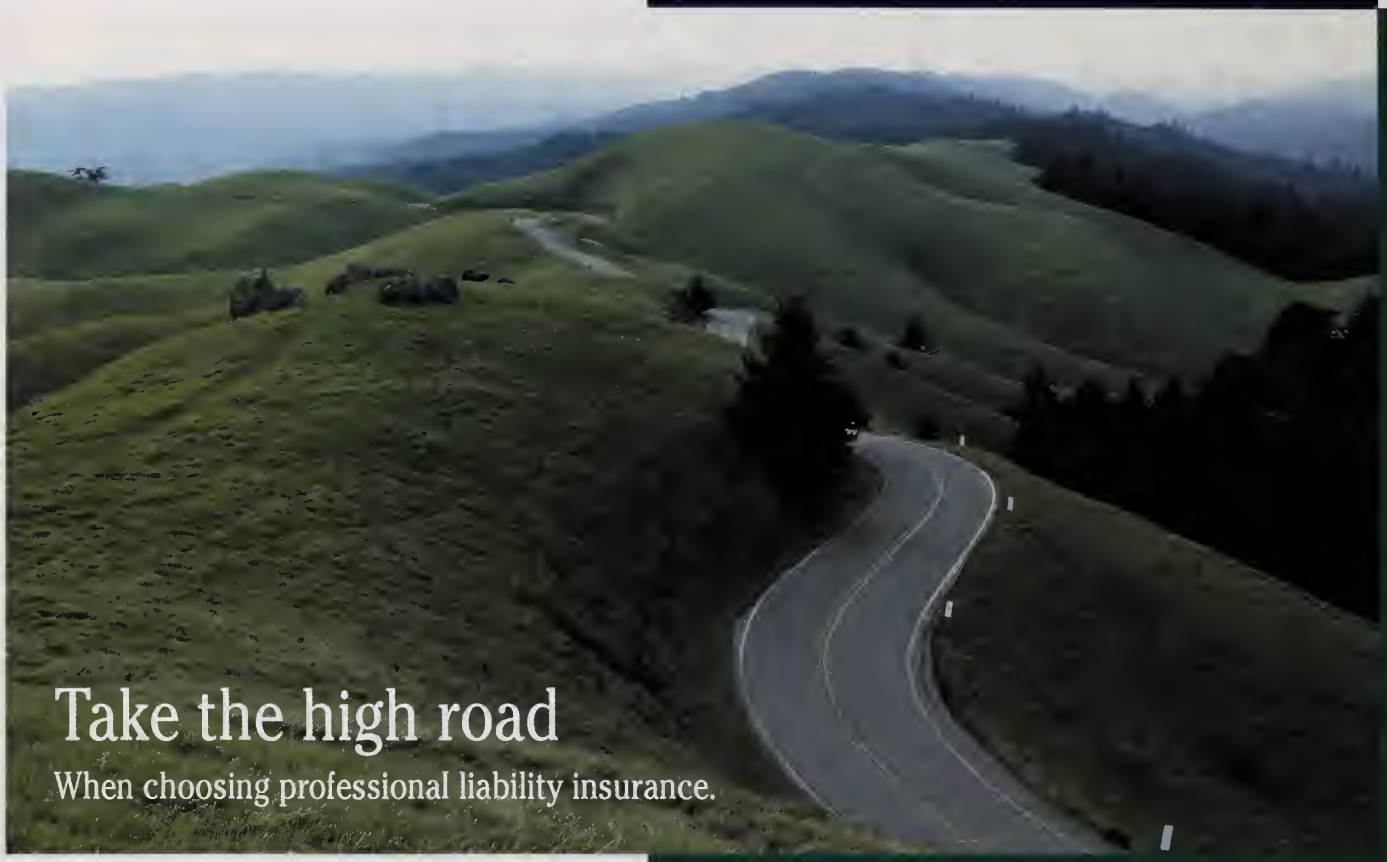


KYM KAOHI, MA • PHYSICIAN REFERRAL SPECIALIST



Straub
Partners in health
straubhealth.com

For assistance, call Kym at 522-4444



NO RATE INCREASE IN 2001

MIEC

Medical Insurance Exchange of California

6250 Claremont Avenue
Oakland, California 94618
800-227-4527
www.miec.com

HAWAII CLAIMS OFFICE:
1360 South Beretania Street,
Honolulu, Hawaii 96814

Rated "A" (Excellent) by A.M. Best

Sponsored by the Hawaii Medical Associatio

THE SAFEST ROUTE IS
WITH AN EXPERIENCED GUIDE.

In Hawaii, that's MIEC. We are the West's first physician-owned, not-for-profit professional liability insurer. For more than a quarter century, we've protected doctors with financially secure coverage. We're also known for our unsurpassed, consistent track record of returning dividend credits to policyholders, when operating results permit. We've returned over $200 million.

lity insurance is a
tionship. At MIEC,
nitment seriously.

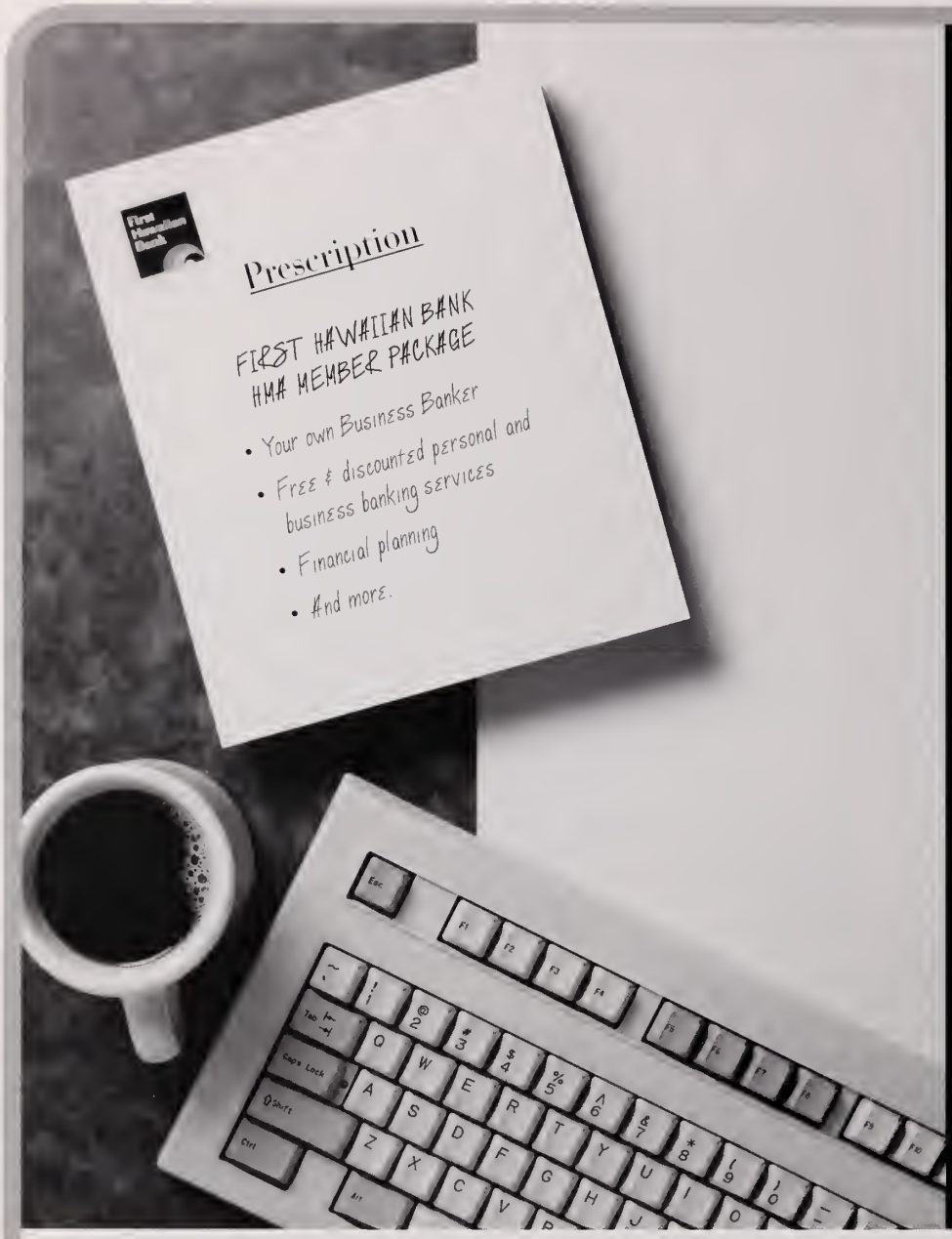
ne original, MIEC.

HAWAII MEDICAL JOURNAL

February 2001 Volume 60, No. 2 ISSN: 0017-8594



HAWAII MEDICAL ASSOCIATION 1856



Your prescription for financial health.

Extra banking benefits for HMA members.

First Hawaiian Bank has the prescription for HMA members. It includes free and discounted personal and business banking services, discounted mortgage loan fees, reduced rates on business loans, equipment and vehicle leasing, free consultation and reduced fees on financial planning, and a Business Banker to help you with it all. It's exactly what you need to keep your finances in excellent health. If you're an HMA member, sign up by calling 525-6262 (or call collect from the neighbor islands).

Bank Online www.fhb.com

First Hawaiian Bank®

THE power OF yes.

EQUAL HOUSING LENDER Member FDIC

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
Vincent S. Aoki MD, Benjamin W. Berg MD, John Breinich MLS, Satoru Izutsu PhD, James Lumeng MD, Douglas G. Massey MD, Myron E. Shirasu MD, Frank L. Tabrah MD, Alfred D. Morris MD

Journal Staff
Editorial Assistant: Drake Chinen

Officers
President: Philip Hellreich MD
President-Elect: Gerald McKenna MD
Secretary: Calvin Wong MD
Treasurer: Paul DeMare MD
Past President: James Lumeng MD

County Presidents
Hawaii: David Camacho MD
Honolulu: William McKenzie MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Gardner Quarton MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 2001 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 28

Book Review of "Medicine in Quotations: Views of Health and Disease Through the Ages"
Dawn Charlaire 28

Medical School Hotline
Anthony P.S. Guerrero MD 29

Out-Patient Parenteral Antibiotic Therapy (OPAT): Clinical Outcomes and Adverse Events
Steven J. Berman MD and E. William Johnson MPH 31

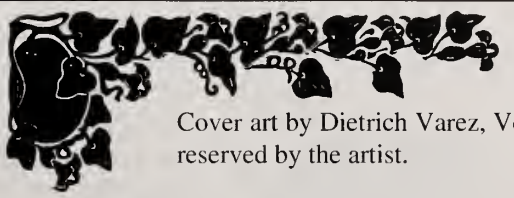
Substance Abuse and Dependence in a Public Hospital: Hawaii
F.M. Baker MD, MPH, FAPA and William F. Haning III, MD 35

Barriers to Good End-of-Life Care: A Physician Survey
Reiko Kayashima MPH and Kathryn L. Braun DrPH 40

News and Notes
Henry N. Yokoyama MD 46

Classified Notices 49

Weathervane
Russell T. Stodd MD 50



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

Wa'a Humu

Wa'a Humu means "sewn canoe." Not all polynesian voyaging canoes were dugouts. Some were "sewn" together out of planks.

Editorial

Norman Goldstein MD
Editor, Hawaii Medical Journal

Editorial February 2001

Our first two manuscripts this month deal with medications. The first by Berman and Johnson described a form of therapy with which many physicians may not be familiar, "OPAT" (Out-Patient Parenteral Antibiotic Therapy).

Homecare companies now provide and manage outpatient services such as fluid replacement, supplemental nutrition, and pain management. With OPAT, homecare companies can provide this service, with the physician monitoring management of the antibiotics.

The authors reviewed 302 coursed of OPAT administered to 221 patients in a six-year study from Steve Berman's busy infectious disease practice. OPAT was successful in 94 percent of the episodes. Major advantages of OPAT include significantly less disruption of the patient's life, in hospital confinement and far more economical care.

The second manuscript discusses substance abuse and dependence. Dr. F.M. Baker served as Chief, In-Patient Services at the Hawaii State Hospital at Kaneohe. She recently relocated to Salisbury, Maryland, but we will hear from her again, as she has submitted several other manuscripts to the Journal.

Sixty-six percent of the patients studied had multiple drug dependences: alcohol, cannabis, crystal methamphetamine and/or cocaine. Despite the fact that this was a small study of only 35 patients, the authors clearly identified the specific type of intervention performed in the Kaneohe State Hospital.

The physician survey about the barriers to good end-of-life care by Braun and Kayashima should be read by every physician and other "health care providers." The majority of the responding physicians (367) had attended to terminally ill patients within the past year and felt the physician should be the first to tell a patient that he or she is dying. Kathryn Braun, a member of the ad hoc committee on living and dying with dignity and her co-author Reiko Kayashima add yet another important study and review of an ever increasing medical dilemma: physician-assisted suicide (P.A.S.) and physician-assisted death (P.A.D.).

Look for the column by Honolulu Star-Bulletin's contributing editor, A.A. (Bud) Smyser, "Doctors Must Support Physician-Assisted Death" in next month's issue of the Journal.

Hawaii Poison Center
941-4411
Neighbor Islands Toll Free
1-800-362-3585
Children Act Fast
So Do POISONS!

More than 40 years of service • Donate to help us save lives

Book Review

Medicine in Quotations: Views of Health and Disease Through the Ages

Edited by
Edward T. Huth, MD and T. Jock Murray, MD.
Philadelphia: American College of Physicians; 2000.
524 pages. Hardcover $49.00,
ISBN 0-943126-83-5

Editor's Note

As a bibliophile and voracious reader, I ordered Medicine in Quotations from the American College of Physicians. After receiving the book, I placed it on my desk, then opened my mail only to find a review by Dawn Chalaire in Science Editor September-October 2000. I had planned to review the book for the Hawaii Medical Journal, but Ms. Chalaire did it for me very well. We reprint it here with her permission.

Norman Goldstein, M.D., F.A.C.P.

Perusing a copy of *Medicine in Quotations: Views of Health and Disease Through the Ages,* one cannot help being struck by the sheer volume of literature written through the centuries about physicians and their profession.

For those who lack the time or inclination to read all of the more than 2500 works referred to in its pages, however, Huth and Murray offer an edited version – a collection of 3000-plus excerpts from some of the world's greatest writers and thinkers. The result is a book that contains wit, insight, humor, and profundity in unusual abundance.

As the editors explain in their introduction, quotations were chosen not only for their relevance to medical concepts and practice, but also for their relevance to all human affairs. (They were not chosen for their conformity to the editors' views.) The entries appear under topic headings from miracles to myositis ossificans, from circulation to civilization, and from preventive medicine to publishing. Although diverse, the topics as a whole serve to illustrate how inextricably health and medicine are woven into almost every aspect of life.

The book's topic headings are arranged alphabetically. Quotations appear chronologically under each heading (with the person to whom a quotation is attributed noted at the beginning and the work in which it was found at the end) to show the progression of thought on each topic through time. This allows each quotation to be viewed separately and as part of an expanding larger context: Quotations listed under a single heading make up a complete unit, each topic contributes to the book as a whole, and the book contains hundreds of references to other works that, when viewed collectively, provide an even more complete picture of the human condition.

A large number of quotations appear under some topic headings, including doctors, physicians, medicine, and medical practice. This is only proper given the book's subject, but many of these quotations are very similar, and several could be eliminated without sacrificing

Continues on p. 49

Medical School Hotline

The Role of Psychiatry in Undergraduate Medical Education at the John A. Burns School of Medicine (JABSOM)

Anthony P.S. Guerrero, M.D.
Assistant Professor of Pediatrics and Psychiatry
Director of Medical Student Education in Psychiatry
Department of Psychiatry

Increasingly, teachers in medicine have recognized the importance of instilling, early on in medical training, the values of humanism and sensitivity to the emotional and social aspects of patient care. Notable humanitarian organizations, such as the Robert Wood Johnson Foundation, have supported efforts to improve knowledge and education in these aspects of the medical profession.[1,2]

Since1989, the Problem-Based Learning (PBL) Curriculum[3] at the University of Hawai'i John A. Burns School of Medicine (UH-JABSOM) has emphasized effective patient care through the clinical application of knowledge gained from multiple disciplines (including epidemiology and the behavioral sciences) and through the appreciation of the human perspective inherent to every patient encounter. Beginning with their very first PBL case (which describes a physician who sustains a needle-stick injury while caring for a patient infected with the HIV virus), students must practice being attentive to the psychosocial issues relevant to patient care.

With the implementation of the PBL curriculum at JABSOM, the Department of Psychiatry has played an increasingly important role in medical education during the pre-clerkship years. In addition to roles as PBL tutors and medical student advisors, faculty in the department function as "resource people" who can discuss the emotional and behavioral perspectives of the cases being studied and who can convey effectively the importance of such issues in the practice of medicine.

Through their case-based study, medical students recognize that it would be impossible to manage the infected foot of their PBL patient if his coexisting problems of untreated schizophrenia and homelessness were not also addressed. This holistic approach was eloquently advocated by Engel[4], who described how practical application of the "biopsychosocial model" can guide effectively the treatment of what would appear to be a purely "biological" condition; namely, an *acute* myocardial infarction.

During the second year (specifically, during the "Brain and Behavior" subunit of the PBL unit which also includes the locomotor and neurologic systems), the students have a more formal introduction to psychiatry through their clinical skills preceptorship, where they learn, from faculty in the Department of Psychiatry, detailed mental status examination as a branch sequence of the general physical examination. Through this experience, students learn more about the specialty of psychiatry, and become more comfortable interacting with patients in psychiatric settings.

During the third year, all students are required to rotate through the 7-week psychiatry clerkship, where they gain experience in general inpatient and outpatient psychiatry, as well as in some of the psychiatric specialties (e.g., child and adolescent psychiatry, addiction psychiatry). From the beginning, the relevance of psychiatry to general medical practice is emphasized. Discussed during the orientation, are: the relatively high prevalence of mental health conditions (e.g., the 17% lifetime prevalence of major depression[5]); the significant morbidity caused by mental health conditions (even in comparison to other chronic general medical conditions[5,6]); the significant mortality caused by mental health conditions (e.g., homicide and suicide as two of the top three causes of death in adolescents[7]); the importance of recognizing life-threatening medical conditions (e.g., alcohol withdrawal, intracranial bleeds) with behavioral manifestations; and the treatability (shown in the scientific literature) of psychiatric conditions. Students are taught the basic psychiatric interview as an essential tool of the *safe physician*, who can establish optimal rapport with patients in various contexts and who will not overlook conditions, which could threaten the safety of either the patient, the physician, or anyone else. The clinical experiences, along with supplementary PBL tutorials, insure that students acquire the knowledge and skills necessary to manage – at the level of a "generic physician" – patients with common psychiatric symptoms. All Department of Psychiatry faculty are required to participate in the clerkship – either through direct supervision of patient care or through participation in the PBL tutorials.

Finally, fourth year students have the opportunity to take month-long electives in various specialties of psychiatry (e.g., child and adolescent psychiatry, addiction psychiatry, consult-liaison psychiatry, psychiatric aspects of obstetrics and gynecology, etc.) All medical students are encouraged to take electives, which can be helpful to them, in whatever specialty they choose.

The faculty's role in undergraduate medical education would not be complete without efforts to enhance recruitment into psychiatry. Although the main objective is to collaborate with other departments in the training of humanistic, competent physicians, Psychiatry, as a community-oriented department, is ever mindful of the acute shortage of psychiatric services. As an example, the current supply of 6300 child psychiatrists in the United States is anywhere from 4000 to 24000 short of what is actually needed, based on workforce demands[8]. In Hawai'i, there is an acute need for more child psychiatrists to care for children with special educational needs.

Misconceptions, which could adversely affect career choice, must be addressed. According to Cutler[9], many medical students eliminate psychiatry as a specialty option because they perceive it to be "too stressful." Psychiatrists care for medical conditions which affect those things which are at the core of our human-ness (e.g., how we think, feel, and relate with others) and, for this reason, many believe that psychiatry is a particularly "stressful" specialty because it seems to "hit so close to home" as one's own emotions are engaged. However, an important part of training in psychiatry is learning to handle appropriately such emotions and, in fact, to use them skillfully for the therapeutic benefit of not just "psychiatric" patients but also patients with general medical conditions. Through increasing skills in recognizing and managing these emotions (which

Continues on p. 48

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA

Out-Patient Parenteral Antibiotic Therapy (OPAT): Clinical Outcomes and Adverse Events

Steven J. Berman MD and E. William Johnson MPH

Abstract

A chart review was conducted of patients in a program featuring self directed, home infusion of antibiotics for serious infections utilizing an out-patient medical office for teaching, mixing of drugs, and monitoring of patients. 302 courses of out-patient parenteral antibiotic therapy (OPAT) were administered to 221 patients. Therapy was successful in 94% of the episodes. Objective adverse events were noted in 25% of patients. To maximize the chance for a successful outcome, treatment plans should be individualized and structured to include systematic monitoring for adverse effects.

Introduction

Parenteral antibiotics are indicated when no effective oral anti-infective exists or when the seriousness of infection mandates a high and reproducible serum concentration. The treatment of serious infections with outpatient parenteral antibiotic therapy (OPAT) has major advantages over inpatient infusion.[1-7] The experience is less disruptive to the patient's life than hospital confinement,[8] and by any standard, the expense is less.[9,10] Early success treating chronic infections, such as osteomyelitis[11] and pneumonia associated with cystic fibrosis,[12] showed the potential of this format. OPAT was promoted for a variety of infections[13] including brain abscess,[14] endocarditis,[15,16] community acquired pneumonia,[17] skin and soft tissue infections,[2] pyelonephritis,[18] and pelvic inflammatory disease.[19,20] Much of the OPAT process was removed from direct physician control[21,22] as government regulations restricted physicians from utilizing infusion services in which they had ownership because of a potential conflict of interest. The delivery of OPAT was then assumed by home care companies as part of their outpatient services, similar to fluid replacement, supplemental nutrition, and pain management.[23,24] As with other home care services the physician was responsible for ordering the medications and for complications and outcome of treatment, but was not directly involved in monitoring the quality of care. An exception to this general rule does, however, allow physicians to provide OPAT as a direct extension of their clinical practice. The material for this paper is drawn from this model.

Correspondence to:
Steven J Berman, MD
1380 Lusitana Street, Suite 810
Honolulu HI 96813
Telephone: (808) 547-6208
Fax: (808) 534-7030

Methods

A retrospective review of all the records of patients in an infectious disease practitioner's outpatient practice who were treated between 1991 and 1996 with self directed home infusion of OPAT was performed. Patients considered for the OPAT program were able to come to the medical office as needed, and had support at home should they require assistance with infusions. A registered nurse taught each patient the mechanics of self-infusion in intensive training sessions. Care of the venous access site, administration and storage of the antibiotic solutions and recognition of side effects were reinforced until the patient was comfortable with the process. The nurse and a physician were available at all times to respond to questions or problems. The patients came to the office at least twice a week for dressing changes, interval history focusing on infusion problems and adverse events, and re-supply of premixed antibiotics. The physician examined the patient at least once a week to assess their clinical status, review laboratory results, and to make changes in medications.

Each infectious episode constituted a separate study case, thus the same patient could be represented multiple times for different infections. Episodes were censored from the analysis if no data was available for follow-up (8 episodes). Each treatment episode was a success when the course of parenteral antibiotics was completed, even if the patient was switched to oral antibiotics. Treatment failures resulted in hospitalization of the patient prior to conclusion of therapy or discontinuation of treatment due to unmanageable adverse effects.

Adverse effects met the following criteria:

1) Nephrotoxicity: a rise in creatinine of 0.5 mg/dL if the pretreatment baseline was abnormal or a 0.5 mg/dL rise above normal standards.
2) Anemia: hemoglobin decrease of 2 g/dL from pre-treatment baseline.
3) Diarrhea: >3 loose stools per day.
4) Eighth nerve toxicity: onset of dizziness or imbalance with the presence of nystagmus or Rhomberg's sign.
5) Fever: >100.0 F degrees.
6) Thrombocytopenia: platelet count of <100,000 g/L or >50% drop if pretreatment baseline was below 100,000 g/L
7) Neutropenia: new onset of a white blood cell count <2,500 cu/cm or a drop of >50% from pre-treatment baseline if entry status was below 2,500 WBC/cm.
8) Hepatic dysfunction: transaminase (ALT) value twice the up per limit of normal or increase from pre-treatment baseline if abnormal.

Results – Patient Population

During the six-year study period, 302 courses of OPAT were administered to 221 patients. The median duration of therapy was 18 days, ranging from 3 to 307 days. Two-thirds of the patients were male and the median age was 40.8 years. Other medical conditions co-existed in 60% of the 302 treatment episodes including solid organ transplantation, acquired immune deficiency syndrome (AIDS), diabetes mellitus, chronic obstructive pulmonary disease (COPD), or cancer of a solid organ, [Table 1].

Results - Clinical Infections

Bacterial infections were treated most often (76%), [Table 2]. Gram-positive bacteria accounted for 59% of isolates (140 of 236), including *S. aureus* (38), *S. epidermidis* (28). Almost forty percent (93/236) of the pathogens were gram-negative bacteria; *pseudomonas aeruginosa* was the most frequent pathogen under treatment (38/93). Forty-one patients had a polymicrobial infection, [Table 3].

Viral infections were treated in 63 episodes, including 39 episodes of cytomegalovirus infection in patients with a transplanted organ. Eighteen other episodes with cytomegalovirus infection were treated in patients with AIDS. Other viral infections in patients with AIDS included six episodes of herpes proctitis or herpes esophagitis. Patients with AIDS were also treated for fungal esophagitis (4), and pneumocystis carinii pneumonia (8). Atypical mycobacterium pulmonary infections not associated with HIV were treated on 5 occasions.

Results - Anti-Infective Medications

Cephalosporins accounted for 49% (152) of the 389 courses of antibiotics. Vancomycin was used 48 times against methicillin resistant staphylococci. Other antibiotics included aminoglycosides, ureidopenicillins, imipenem, clindamycin, and ciprofloxicin. Antiviral agents utilized were ganciclovir, foscarnet, and acyclovir. Pentamidine was also administered, [Table 4].

Results - Treatment Outcome

OPAT was successful in 94% (283/302) of the episodes. No further anti-infective therapy was necessary in 236 cases; step-down to oral therapy occurred in the remaining 47. Antibiotics were changed during treatment in 3 patients because of drug resistance and in 12 patients because of intolerable side effects.

Treatment failed in 19 episodes. Of these, 16 episodes required hospitalization. Clinical deterioration occurred in nine patients with bacterial infections (osteomyelitis, wound infection, pyelonephritis, pelvic abscess, septic bursitis, paratyphoid fever, orchitis, cholangitis, and line sepsis). Five patients were hospitalized for progression of HIV infection. One patient could not cope with home infusion and one patient required a surgical procedure unrelated to the infection. Therapy was terminated in 3 patients because the side effects of drug outweighed the benefit of further treatment: in one patient pentamidine caused vestibular and renal dysfunction; pentamidine caused hypoglycemic reactions in another patient; and ganciclovir induced thrombocytopenia in the third patient. Overall, patients with HIV infection experienced significantly higher rates of treatment failure (26%) compared to the rest of the study population (4%).

Table 1.— Co-Morbid Conditions

No Underlying Disease	122	40%
Renal Transplant	56	19%
AIDS	31	10%
Diabetes Mellitus	20	7%
Chronic Obstructive Pulmonary Disease	14	5%
Solid Organ Cancer	16	5%
Heart Transplant	13	4%
Chronic Skin and Soft Tissue Infection	7	2%
Coronary Artery Disease	4	1%
End Stage Renal Disease	4	1%
Rheumatoid Arthritis	3	1%
Other	12	4%

Other includes: Leukemia, Nephrolithiasis, Peripheral Vascular Disease, Prosthetic Joint, Sweet's Syndrome, Systemic Lupus Erythematous, Bone Marrow Transplant, Traumatic Arthritis

Table 2.— Clinical Diagnosis of Infection

Cytomegalovirus	57	19%
Soft and Soft Tissue	42	14%
Lower Respiratory Tract	38	13%
Septicemia	33	11%
Osteomyelitis	29	10%
Ear, Nose, and Throat	23	8%
Pyelonephritis	19	6%
Post-Operative Wound	11	4%
Intra-abdominal Abscess	11	4%
Septic Arthritis	11	4%
Endocarditis	6	2%
Herpes Virus	6	2%
Other	16	5%

Other includes: actinmycosis, bacterial meningitis, chronic bronchitis, diverticulitis, Lyme disease, mycotic aneurysm, orchitis, prostatitis, graft infection, torulopsis esophagitis, CMV prophylaxis

Table 3.— Microbiology

P aeruginosa	38
S aureus	34
S epidermidis	28
E coli	18
E faecalis	14
Streptococcus sp.	14
S pyogenes	12
Enterobacter sp.	12
K pneumoniae	12
Pseudomonas sp.	9
Bacteroides sp.	5
Mycobacteria sp.	5
Other (23 organisms)	49

Table 4.— Anti-Infective Medications

Cephalosporins	152	39%
Ganciclovir	54	14%
Vancomycin	48	12%
Aminoglycosides	41	11%
Ureidopenicillins	29	7%
Foscarnet	14	4%
Imipenem	13	3%
Pentamidine	8	2%
Clindamycin	8	2%
Acyclovir	6	2%
Ciprofloxacin	6	2%
Other	10	3%

Other: Amphotericin B, Doxycyline

Results – Adverse Events

Quantifiable adverse events were documented in 74/302 episodes (25%). The most frequently encountered verifiable new findings included renal dysfunction, drug rash, anemia, diarrhea, vestibular dysfunction, drug fever and bone marrow depression, [Table 5]. In addition, 18% of the patients (55 episodes), complained of constitutional symptoms reporting fatigue (20), headache (12), anorexia (5), as well as nausea (19), weakness (2), palpitations (1), sleepiness (1), and insomnia (1).

AIDS as an underlying condition was associated with a significantly higher rate of verifiable adverse events (58%) compared to patients with transplanted organs (26%) or patients with no underlying disease (19%).

The impact of underlying disease upon objective adverse events can be seen by comparing the treatment of cytomegalovirus infections with ganciclovir in patients with AIDS and organ transplantation. The incidence of adverse events was much higher in ganciclovir-treated patients with HIV infection, 56% (5/9) compared to 33% (14/43) in patients with organ transplantation receiving the same drug.

Other opportunistic infections in patients with AIDS were also associated with a very high incidence of adverse effects during treatment (>50%). Adverse events were noted in 4 of 6 patients on pentamidine for pneumocystis carinii pneumonia, 2 of 3 patients on co-trimoxaxole, 4 of 8 patients on foscarnet, 4 of 6 patients treated for refractory herpes infection with acyclovir, and 3 of 4 patients with fungal esophagitis treated with Amphotericin B.

Adverse events from antibiotics used to treat bacterial infections were also common and resulted in a change of drug in 10 episodes but did not necessitate termination of OPAT. The incidence of adverse events was greatest with imipenem and ureidopenicillins (>20%), though clinically significant side effects occurred with vancomycin (19%), cephalosporins (13%), and aminoglycosides (5%) as well.

Table 5.— Adverse Events

Renal Toxicity	21	7%
Drug Rash	18	6%
Anemia	13	4%
Diarrhea	13	4%
Eighth Nerve Toxicity	11	4%
Fever	9	3%
Thrombocytopenia	8	3%
Neutropenia	7	2%
Hepatitis	3	1%
Other Significant Adverse Events	15	5%

Other: Thrush, Bleeding, Orthostatic Hypotension, Blurred Vision, Hematuria, Bradycardia, Hypoglycemia

Table 6.— Adverse Events and Medication

Pentamidine/Co-Trimoxazole	1/1	100%
Foscarnet/Ganciclovir	4/5	80%
Amphotericin B	3/4	75%
Co-Trimoxazole	2/3	67%
Pentamidine	4/6	67%
Acyclovir	4/6	67%
Foscarnet	4/8	50%
Imipenem	5/13	39%
Ganciclovir	16/48	33%
Extended Penicillins	6/29	21%
Vancomycin	9/48	19%
Cephalosporins	19/152	13%
Aminoglycosides	2/41	5%

Discussion

OPAT was successful in 94% of the treatment episodes with an adverse event rate of 25%. The outcome of therapy in this paper is similar to that previously reported[25] but not the rate of adverse events or side effects. Adverse events, in earlier publications, were considered significant when there was a change in therapy; the dose of antibiotic was adjusted, or the antibiotic was discontinued.[26] Monitoring organ function for changes of potential clinical significance is the standard of practice when treating infections in patients who are hospitalized and is probably more important in the outpatient setting where face to face encounters between the patient and the treating physician or staff nurse are less frequent. Quantifying the etiology of any recognized adverse events represents a challenge to the clinician as the factors of drug, underlying disease, and current infection can each play a significant role.

As illustrated in this paper, underlying disease can have a profound impact on the morbidity and outcome of therapy. The formal structure of all OPAT programs must include careful monitoring of the patient for adverse events and be tailored to the patient, their infection, treatment, and underlying disease.

References

1. Coley, C.M., *et al.*, *Preferences for home vs hospital care among low-risk patients with community-acquired pneumonia.* Arch Intern Med, 1996. **156**(14): p. 1565-71.
2. Tice, A.D., *An office model of outpatient parenteral antibiotic therapy.* Rev Infect Dis, 1991. 13 **Suppl 2**: p. S184-8.
3. Smego, R.A., Jr. and R.B.d. Gainer, *Home intravenous antimicrobial therapy provided by a community hospital and a university hospital.* Am J Hosp Pharm, 1985. **42**(10): p. 2185-9.
4. Poretz, D.M., *et al.*, *Intravenous antibiotic therapy in an outpatient setting.* Jama, 1982. **248**(3): p. 336-9.
5. Winter, R.J., *et al.*, *Self-administered home intravenous antibiotic therapy in bronchiectasis and adult cystic fibrosis.* Lancet, 1984. **1**(8390): p. 1338-9.
6. Kind, A.C., D.N. Williams, and J. Gibson, *Outpatient intravenous antibiotic therapy. Ten years' experience.* Postgrad Med, 1985. **77**(2): p. 105-8, 111.
7. Dagan, R. and M. Einhorn, *A program of outpatient parenteral antibiotic therapy for serious pediatric bacterial infections.* Rev Infect Dis, 1991. **13 Suppl 2**: p. S152-5.
8. Hammond, D., *Home intravenous antibiotics. The safety factor.* J Intraven Nurs, 1998. **21**(2): p. 81-95.
9. Chamberlain, T.M., *et al.*, *Cost analysis of a home intravenous antibiotic program.* Am J Hosp Pharm, 1988. **45**(11): p. 2341-5.
10. Harris, L.F., T.F. Buckle, and F.L. Coffey, Jr., *Intravenous antibiotics at home.* South Med J, 1986. **79**(2): p. 193-6.
11. Antoniskis, A., *et al.*, *Feasibility of outpatient self-administration of parenteral antibiotics.* West J Med, 1978. **128**(3): p. 203-6.
12. Raeburn, J.A., *Antibiotic management of cystic fibrosis.* J Antimicrob Chemother, 1976. **2**(2): p. 107-9.
13. Bradley, J.S., *Outpatient parenteral antibiotic therapy. Management of serious infections. Part I: Medical, socioeconomic, and legal issues. Pediatric considerations.* Hosp Pract (Off Ed), 1993. **28 Suppl 1**: p. 28-32.
14. Hinkle, J.L., *Home antibiotic therapy for brain abscesses [see comments].* J Intraven Nurs, 1990. **13**(3): p. 172-6.
15. Durack, D., *Outpatient parenteral antibiotic therapy. Management of serious infections. Part II: Amenable infections and models for delivery. Endocarditis.* Hosp Pract (Off Ed), 1993. **28 Suppl 2**: p. 6-9; discussion 56.
16. Francioli, P., *et al.*, *Treatment of streptococcal endocarditis with a single daily dose of ceftriaxone sodium for 4 weeks. Efficacy and outpatient treatment feasibility [comment].* Jama, 1992. **267**(2): p. 264-7.
17. Trowbridge, J.F., *Outpatient parenteral antibiotic therapy. Management of serious infections. Part II: Amenable infections and models for delivery. Pneumonia and chronic lung disease.* Hosp Pract (Off Ed), 1993. **28 Suppl 2**: p. 20-4, discussion 58.
18. Millar, L.K., *Outpatient parenteral antibiotic therapy. Management of serious infections. Part II: Amenable infections and models for delivery. Pyelonephritis.* Hosp Pract (Off Ed), 1993. **28 Suppl 2**: p. 31-5; discussion 59-60.
19. Brown, R.B., *Selection and training of patients for outpatient intravenous antibiotic therapy.* Rev Infect Dis, 1991. **13 Suppl 2**: p. S147-51.
20. Sweet, R.L., *Outpatient parenteral antibiotic therapy. Management of serious infections, Part II: Amenable infections and models for delivery. Pelvic inflammatory disease.* Hosp Pract (Off Ed), 1993. **28 Suppl 2**: p. 25-30; discussion 58-9.
21. Lawton, S.E., *Outpatient parenteral antibiotic therapy. Management of serious infections. Part I: Medical, socioeconomic, and legal issues. Legal issues.* Hosp Pract (Off Ed), 1993. **28 Suppl 1**: p. 52-7.
22. Tierce, J.C., *Outpatient parenteral antibiotic therapy. Management of serious infections. Part I: Medical, socioeconomic, and legal issues. Reimbursement.* Hosp Pract (Off Ed), 1993. **28 Suppl 1**: p. 44-51.
23. Smith, P.W., *Antimicrobial therapy in special situations, including extended care facilities and the outpatient setting.* Am J Infect Control, 1989. **17**(5): p. 316-22.
24. Milkovich, G., *Antibiotic usage: pharmacoeconomic impact in a changing healthcare system.* Drugs, 1996. **52 Suppl 2**: p. 80-2.
25. Cerra, F.B., *et al.*, *A managed care model for home infusion therapy.* Am J Med Qual, 1995. **10**(2): p. 93-9.
26. Eron, L.J., *Parenteral antibiotic therapy in outpatients: quality assurance and other issues in a protohospital.* Chemotherapy, 1991. **37 Suppl 2**: p. 14-20.


Women who smoke get
MORE DATES
WITH DOCTORS.
Smoking, more than any other controllable behavior, contributes to a woman's risk of heart disease and stroke. Which means that if you smoke, you stand a better chance of spending time in the company of doctors. Unfortunately, it might not be the kind of date you had in mind. To learn more about reducing your risk through smoking cessation, heart-healthy eating and exercise, visit www.americanheart.org or call 1-800-AHA-USA1.
American Heart Association®
Fighting Heart Disease and Stroke
This space provided as a public service. © 1998, American Heart Association

Substance Abuse and Dependence in a Public Hospital: Hawaii

F.M. Baker MD, MPH, FAPA and William F. Haning III, MD

Abstract

A pilot study of the prevalence of substance abuse disorders was completed on the only open unit of the only state psychiatric hospital in Hawaii to address the following questions: 1) What were the substances of abuse and dependence in this population? 2) What was the pattern of abuse and/or dependence in this sample? 3) How did these patterns compare to the patterns observed in the published literature? 4) What was the predominant Stage of Change of these patients? 5) Was the staff perception that these patients were in denial an accurate perception? Methodology: All patients admitted to the unit between 1st June and 31st August 1999 comprised the sample, N=35. Each patient was assigned diagnoses based upon the DSM-IV criteria and level of change was assessed. Results: The demographic characteristics of the sample follow: 60% were ages 20-39, 89% were male; 92% were currently single, 71% had an education of high school or college, and 66% had a diagnosis of schizophrenia or schizoaffective disorder. The racial composition reflected the diversity of Hawaii. Although 20% of the sample had no substance abuse problem, 66% of the remaining patients were multiply dependent upon alcohol, cannabis, crystal methamphetamine, or cocaine with 48% of these patients in the Precontemplative Stage of Change (denial). The patterns of multiple substances of abuse and dependence were higher than in the reported literature. Further studies are needed.

Introduction

The recent "Mental Health: A Report of the Surgeon General" reported that "in one year 3% of the adult United States population had both a mental disorder and an addictive disorder and 6% had addictive disorders alone."[1] Studies of mentally ill persons in the United States have demonstrated that more than 70% of persons with schizophrenia have high rates of co-occurring nicotine dependence.[2,3] Among alcohol and drug abusers in treatment 80% are smokers of nicotine.[4] As many as 50% of schizophrenic patients in treatment have been identified as having alcohol or illicit drug dependence [5,6] Investigators have suggested that the substance use among schizophrenic patients may moderate the side effects of traditional antipsychotic medication, specifically akathisia and extrapyramidal side effects, and/or moderate auditory hallucinations and paranoid delusions.[7] Thus, patients with mental illness, particularly schizophrenia, are at an increased risk of dependence upon nicotine, alcohol, and/or other illicit substances, i.e., cannabis or cocaine.[8]

In comparison to many mainland cities, the state of Hawaii is more culturally diverse. No single racial group forms the majority of its population, which is comprised of Asian (34.2%), Caucasian (22.1%), Native Hawaiians and Pacific Islanders (21.4%), Mixed not including part Hawaiian (21.4%), and Others (African American and Puerto Rican) (1.5%).[9] The island of Oahu has 75% of Hawaii's population and the only public psychiatric hospital for the state. In order to establish the pattern of substance abuse and dependence among patients in this setting, a pilot study was completed to address the following questions. First, what substances are used in this population? Second, what is the pattern of abuse and dependence? Third, how do these findings compare to the patterns observed in the published literature? Fourth, what is the predominant stage of change of our patients? And, fifth, would a treatment initiative focused on the culture of the patient be helpful?

Methodology

All 36 patients on the only open, in-patient unit of the Hawaii State Hospital comprised the study sample. As the only open, psychosocial (psychiatric) rehabilitation unit, it was anticipated that patients would be actively working toward their discharge through active participation in their treatment program. The psychiatric rehabilitation program included specific groups to address the skills needed by the patient to be successful in the patient's discharge environment based upon the patient's strengths and weakness identified through a detailed functional assessment.[10,11] The groups included psychoeducational groups on mental illness and psychoactive medication, basic living skills training, social skills training, prevocational assessment, and community reintegration activities. Patients with substance abuse problems participated in Substance Abuse Education groups as well as Alcoholics Anonymous and Narcotics Anonymous groups.

These data were obtained as part of a Quality Assurance Survey based upon chart review. The Quality Assurance Survey was implemented to provide data about the perception that a number of substance abuse patients, though in treatment on a psychiatric rehabilitation unit, were not actively working in their substance abuse treatment programs. A chart abstraction form was utilized to record the demographic data, Axis I diagnoses, specific substances of abuse and substances of dependence based upon Axis I diagnoses, the Psychiatric Evaluation, the Addiction Psychiatry Evaluation, and the identified stage of recovery documented in the Addiction Psychiatry Evaluation.

Correspondence to:
F.M. Baker MD, MPH, FAPA
Medical Director, Lower Shore Clinic
505 East Main Street,
Salisbury , MD 21804
Phone: 410-341-3420
Fax: 410-341-3397

The "Changing for Good"[12] six-stage program (see Table 1 and Figure 1) provides a conceptual model for understanding the progressive stages of change from dependence to living a "clean and sober" life style. It serves both diagnostic and heuristic purposes.

Results

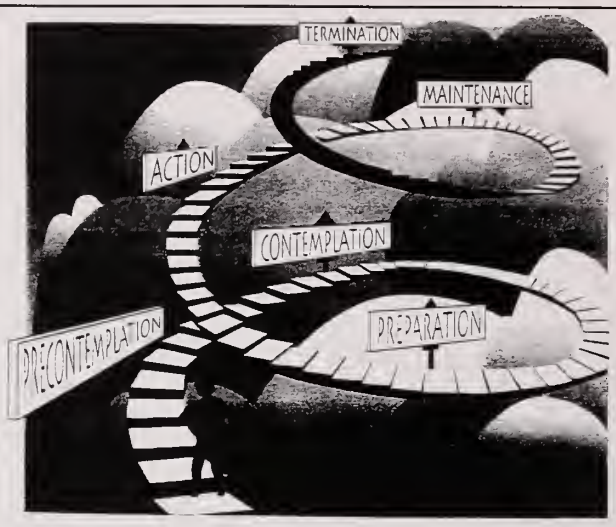
All patients on the open HSH unit between 1st of June to the 31st of August 1999 comprised the sample (N=35). Some 17% of the sample (N=6) were Asian (Filipino or Japanese), 26% (N=9) were Caucasian, 26% (N=9) were of Mixed Race (2 or more racial groups, i.e. Chinese, Caucasian), 23% (N=8) were Hawaiian or Pacific Islander (Samoan, Tongan), and 8% (N=3) were Other (e.g., African American, Portuguese, Puerto Rican). Ninety-four percent (N=33) of the sample were men. One of the 2 women was of Mixed heritage age 30-39 and the second woman was of Other heritage and age 40-49. Seventeen percent (N=6) of the sample were aged 20-29, 43% (N=15) were aged 30-39, 26% (N=9) were aged 40-49, and 14% (N=5) were aged 50-59. Sixty-nine percent (N=24) were single, 23% (N=8) were separated or divorced, and 8% ((N=3) were married. Some 9% (N=3) of the sample had completed a Bachelor or Master degree, 42% (N=15) had attended community college, and 20% (N=7) had completed high school or earned a GED diploma. Some 20% (N=7) of the sample had completed between the 7th to the 11th grade and 9% (N=3) were functionally illiterate or had attended ungraded special education classes. Diagnosis by race is shown in Table 2. Twenty percent (N=7) of the sample had no substance abuse or dependence diagnoses. Fourteen percent (N=5) of the sample abused 2 or more substances (e.g., alcohol and marijuana); but did not meet dependence criteria. Sixty-six percent (N=23) of the sample was both dependent upon and abusing substances. Of these patients 43% (10 of 23) were dependent on 2 or more substances (e.g., crystal methamphetamine, marijuana, and alcohol) and 52% (12 of 23) were abusing 2 or more substances. Table 3 gives the number of patients who were dependent upon various substances in this sample. The majority of patients with an Axis I diagnosis of a non-substance disorder and an Axis I substance disorder, the dually diagnosed, were mainly Schizophrenic (Table 4). Table 5 presents the percentage of patients and their Stage of Change. The majority of substance abusing and/or dependent patients were in the Precontemplative Stage.

Discussion

The racial composition of our sample reflected the cultural diversity of Hawaii. In contrast to the cocaine epidemic of the center cities of the mainland, (smokable) crystal methamphetamine was the amphetamine-like substance of concern. The epidemic of crystal methamphetamine abuse had been identified as a major public health problem in Hawaii for several years.[13]

In contrast to the Baltimore sample of dually diagnosed, chronically mentally ill patients,[14] these patients were better educated with 66% (23 of 35) patients having a high school education or beyond. The pattern of abuse and dependence in this sample was more complex than found in a sample of chronically mentally ill patients with dual diagnosis.[14] Dually diagnosed patients with a diagnosis of a psychotic disorder were found to be dependent on alcohol, cannabis, crystal methamphetamine, and nicotine or to be dependent on alcohol and nicotine and to be abusing cannabis and crystal methamphetamine. In this study most dually diagnosed patients had one Axis I psychotic disorder and four Axis I substance use disorders.

Figure 1.— The Spiral of Change



Prochaska JO, Norcross JC, DiClemente CC. Changing for Good. New York: Avon Books, Inc. 1994, p 49

Table 1.—Stages of Change

- PRECONTEMPLATION
  - There is no intention of changing behavior in the foreseeable future
- CONTEMPLATION
  - The person acknowledges that he/she has a problem, but has not made a commitment to action. Plans to act, perhaps in 6 months.
- PREPARATION
  - The person is committed to action and may have made small behavioral changes. Plans to take action in the next month.
- ACTION
  - The person modifies behavior, experiences, or the environment to over come the problem. (Altering additive behavior for between one day to six months is evidence of being in the Action Stage).
- MAINTENANCE
  - The person consolidates the gains attained in the Action and other Stages and actively focuses on strategies to prevent lapses and relapses
- TERMINATION
  - The person no longer feels tempted or threatened by the former addiction or problem and has complete confidence that he/she can cope without fear of relapse

Prochaska JO, Norcross JC, DiClemente CC. Changing for Good. New York: Avon Books, Inc. 1994, p 49

Table 2.—Diagnosis by Race

Diagnosis	Asian	Caucasian	NH/PI	Mixed	Other	Total	
	N	N	N	N	N	N	%
Schizophrenia, Schizoaffective Disorder	5	6	6	4	2	23	66
Bipolar Disorder	-	3	-	-	-	3	9
Amphetamine Psychosis	-	-	2	4	-	6	17
Other	1	-	-	1	1	3	9
Totals	6	9	8	9	3	35	100
% of Total Sample	17%	26%	23%	26%	8%	100%	

Table 3.—Pattern of Dependence by Substance Abusers		
Dependence	Alcohol*	14 Patients
Dependence	Crystal Methamphetamine*	12 Patients
Dependence	Cocaine*	10 Patients
Dependence	Cannabis (Marijuana)*	9 Patients

*= Many patients had more than one dependence

Table 4.—Dual Diagnosis: Mental Illness of Substance Abuser or Substance Dependent Patients						
Mental Illness	Male N	Male %	Female N	Female %	Total N	Total N
Schizophrenia,	5	46	-	-	5	42
Schizoaffective Disorder	2	18	-	-	2	17
Bulimia Nervosa	1	8	-	-	1	8
Psychosis Nos	3	27	-	-	3	25
Paraphilia	1	8	-	-	1	8
Totals	12	100	-	-	12	100

Table 5.— Stage of Change of the Patients Studied		
Stage of Change*	N	%
No substance Abuse	7	20
Precontemplative	17	49
Contemplative Stage	2	6
Preparatory Stage	4	11
Action Stage	2	6
Not Evaluated/Refused	3	9
Totals	35	100

*Source: Prochaska JO, Norcross JC, DiClemente CC. Changing for Good. New York: Avon Books, Inc. 1994, pp 36-50

Comparing these findings with the published literature, the rate of co-occurring substance abuses and dependence (drug use disorders) (N=12, 34%) were slightly higher than published rates for patients with psychotic illness and one or two substances of dependence. The Epidemiologic Catchment Area (ECA) Survey of community residents reported that 47% of patients with schizophrenia had a substance abuse disorder in their lifetime, 34% had alcohol disorder diagnosis in their lifetime, and 28% has a diagnosis of drug use disorder in their lifetime[5,8] In contrast to prior studies a pattern of multiple dependence (2 to 4 substances) or multiple abuse of 2 to 3 substances was observed. Some 66% of the 80% of patients (N=28) who were substance abusers were multiply dependent and in the Precontemplative stage of change (denial). The rates of nicotine dependence in this sample were consistent with prior studies.[2,3]

Although these investigators initially questioned the need for a culture specific treatment program, the data in the charts revealed that the level of readiness for change was Precontemplative and characterized by denial in almost all of the patients with substance abuse disorders. This resulted in a failure of these patients to engage in therapy so that the question of cultural appropriateness did not even arise. A partial explanation for this pattern of multiple dependences and/or multiple substances of abuse may be a tolerance for the use of cannabis in some of the islands that comprise the state of Hawaii. It was not unusual for some patients to report that their parents' "cash crop" was cannabis, which they gave to the patient in childhood. Several patients, also, reported the early use of alcohol with parental encouragement. The majority of the Caucasian patients were not born in Hawaii, but emigrated from the mainland. Patterns of substance abuse begun on the mainland were continued in Hawaii and for some patients escalated in amount and multiplied in type of substances used.

The clinical impression of the treatment team that the patients with substance abuse/dependence were in denial was confirmed. Only 23% (N=8) of the patients were in Contemplative, Preparatory, or Action phases of change readiness. Although the remainder were attending substance abuse education classes and AA/NA meetings, they denied that they had substance abuse problems and a few stated that they anticipated drinking alcohol or using cannabis upon discharge.

This pilot study facilitated the identification of the specific type of intervention needed in our setting. In addition to the Substance Abuse Education groups, the Addiction Psychiatry Service initiated a new series of groups based upon the "Changing for Good" six-stage model. Beginning with a group for all patients in the Precontemplative Stage, patients remained in this group until they reached the Contemplative Stage. Then, they were advanced to the Contemplation Stage group and so on until the sixth stage. The Addiction Psychiatry Service modified the definition of the sixth stage, the Termination Stage, to a Relapse Stage that fit better with the model of addiction as a chronic, progressive, relapsing disorders, similar to rheumatoid arthritis or diabetes mellitius.[15] This proved compatible with motivational enhancement approaches increasingly favored in this population with psychotic Comorbidity.[16]

Although establishing a treatment program directed to the cultural concerns of our patients was considered, the psychosocial rehabilitation program contained two group experiences which described Native Hawaiian and Pacific Islander culture, relationships, dietary preferences, and religious beliefs as well as contrasting other Asian cultures with Native Hawaiian culture. The development of a Precontemplative Group was identified as the optimum utilization of resources to address the significant resistance to treatment found in patients with substance abuse problems in this study.

The prevalence of multiple substances of dependence and abuse in the same patient in this Hawaiian in-patient population was somewhat surprising for those clinicians whose primary practice was not substance abuse disorders. Although the co-occurrence of substance abuse and mental disorders has been well established from the 1980s, the extent of alcohol, marijuana and crystal methamphetamine dependencies with episodic cocaine abuse in a patient with schizophrenia or schizoaffective disorder was unanticipated. The need to provide in-service staff education to facilitate better

treatment interventions with these patients was established by the Addictive Psychiatry Service. The involvement of treatment team members as co-leaders of the "Changing for Good" groups provided direct clinical experience with the techniques of interventions targeted to the specific state of readiness of the patient to address the patient's pattern of substance dependence and abuse. We look forward to presenting the outcome of a longitudinal study involving this type of intervention with the total hospital population.

References

1. Substance Abuse and Mental Health Services Administration, National Institute of Mental Health: Fundamentals of mental health and mental illness, in Mental Health: A Report of the Surgeon General. Washington ,DC, Department of Health and Human Services, 2000 pp 80-104
2. Dixon L, Haas G. Weiden PJ, et al: Drub abuse in schizophrenic patients: clinical correlates and reasons for use. *American Journal of Psychiatry* 148:224-230, 1991
3. Ziedonis DM, Kosten TR, Glazer WM, et al: Nicotine dependence and schizophrenia. *Hospital and Community Psychiatry* 45:204-206, 1994
4. Ockene JK, Kristeller JL, Donnelly G: Tobacco, in The American Psychiatric Press Textbook of Substance Abuse Treatment – Second Edition edited by M Galanter and HD Kleber. Washington DC, American Psychiatric Press, 1999 pp 215-237
5. Reiger DA, Farmer ME, Rae DS, et al: Comorbidity of mental disorders with alcohol, and other drug abuse: results from the Epidemiologic Catchment Area (ECA) Study. *Journal of the American Medical Association* 264:2511-2518. 1990
6. Shaner A, Khalsa ME, Roberts L, et al: Unrecognized cocaine use among schizophrenic patients. *American Journal of Psychiatry* 150:758-762, 1993
7. Brady KT, Halligan P, Malcolm RJ: Dual diagnosis, in The American Psychiatric Press Textbook of Substance Abuse Treatment – Second Edition edited by M Galanter and HD Kleber. Washington DC, American Psychiatric Press, 1999 pp 475-483
8. Ziedonis D, Wyatt S: Psychotic disorders, in Principles of Addiction Medicine – Second Edition edited by AW Graham and TK Schultz. B (eds). American Society of Addiction Medicine Inc., 1998, pp 1007-1027
9. Department of Business, Economic Development and Tourism, State of Hawaii: The State of Hawaii Data Book, 1997: A Statistical Abstract. Honolulu HI, Department of Business, Economic Development and Tourism, State of Hawaii, 1998
10. Anthony WA, Cohen M, Farkas M: A psychiatric rehabilitation treatment program: can I recognize one if I see one? Community Mental Health Journal 19:83-96, 1982
11. Lamb HR: A century an a half of psychiatric rehabilitation in the United States. Hospital and Community Psychiatry 45:1015-1020, 1994
12. Porchaska JO, Norcross JC, Diclemente CC: Changing For Good. New York, Avon Books, 1994
13. Nestor TA, Tamomoto WI, Kam TH, et al.: Crystal methamphetamine-induced acute pulmonary edema: a case report. Hawaii Medical Journal 48:457-458,460, 1989
14. Baker FM, Stokes-Thompson J, Davis OA et al: Psychosocial rehabilitation of the black chronically mentally ill: two year outcome. Psychiatric Services 50:535-539,1999
15. Khantzian EJ: Self-regulation and self-medication factor in alcoholism and the addictions: similarities and differences. Recent Developments in Alcoholism. 8:255-271, 1990
16. Westermeyer J: A case approach, in Addiction Treatment: Avoiding Pitfalls by The Committee on Alcoholism and Addictions of the Group for the Advancement of Psychiatry. Wa. American Psychiatric Press, 1998, pp 21-30



Hospice Hawaii &
The Queen's Medical Center
present

Dr. Ira Byock

Caring For Our Patients As They Die

Friday, February 23, 2001
8 a.m.
Kamehameha Auditorium
Queen's Medical Center

Dr. Ira Byock, a palliative care physician and advocate for improved end-of-life care, is a Past President of the American Academy of Hospice and Palliative Medicine. His research contributed to the Missoula-VITAS Quality of Life Index, which is a tool for measuring the quality of life at the end of life, and he is the author of *Dying Well: The Prospect for Growth at the End of Life.*

HOSPICE HAWAII AT HOME

For more information, please call 924-9255.

THE QUEEN'S MEDICAL CENTER

Until there's a cure there's the American Diabetes Association.

Check out the Hawaii Medical Association website at
www.hma-assn.org



checked.

With early detection, nine out of ten men can be successfully treated for prostate cancer. Yet every year thousands die needlessly, many of them too embarrassed to take a quick, painless examination that can spot the disease soon enough for a wide array of life-saving treatments. So please, take a moment for the rest of your life. Get it checked. Like George Foreman does.

AMERICAN CANCER SOCIETY®
THERE'S NOTHING MIGHTIER THAN THE SWORD

For more information call 1 800 ACS-2345

Barriers to Good End-of-Life Care: A Physician Survey

Reiko Kayashima MPH and Kathryn L. Braun DrPH

Abstract

Surveyed about barriers to good end-of-life care were 804 Hawaii physicians in specialties most likely to care for dying patients. Responses were received by 367 (46%). The majority attended terminally ill patients within the past year and felt that the physician should be the first to tell a patient that he/she is dying. Yet 86% identified barriers to talking about end-of-life preferences and 94% identified barriers to providing good end-of-life care. Perceived as major barriers were family conflict about the best course of action, patient/family discomfort with or fear of death, and cultural/religious beliefs of the patient or family. Since relatively few respondents supported the concepts of physician-assisted suicide (32%) or physician-assisted death (18%), the alternative is for physicians to join with other concerned entities to help overcome the attitudinal, behavioral, educational, and economic barriers to providing appropriate, humane, and compassionate care for the dying.

Introduction

Improving end-of-life care has been the topic of national and local interest. Many Americans are afraid that they "will receive more medical care and less pain relief than they want" when they are dying.[1, p.14] These fears are not unfounded. A national survey found that 47% of responding physicians acted against their conscience in providing care to the terminally ill, and were more concerned about the provision of overly burdensome treatment than about undertreatment.[1] Validating fears of the public, the SUPPORT study reported that half of the patients who died in the hospital died in moderate to severe pain.[2]

What are barriers to providing good end-of-life care? Unfortunately, there are many. Whereas most Americans want to die at home, about 60% die in hospitals and another 17% die in nursing homes.[3-5] Death in the hospital, however, often is prolonged due to pressures to use heroic and aggressive treatment that, not coincidently, generates more revenue than discussion and palliative care.[6-8] Hospice care can improve the quality of one's death, but nationally, less than 15% of in-home deaths are attended by hospice.[4] In Hawaii, about 20% of deaths occur under hospice although many of these individuals are referred to hospice in the last weeks or days before death.[9]

Correspondence to:
Reiko Kayashima MPH
John A. Burns School of Medicine,
University of Hawaii,
1960 East-West Road, Biomed C-106,
Honolulu, HI 96822,
e-mail kayashim@hawaii.edu.

Several physician-related barriers have been identified as well. First, few medical text books include information about death and dying, and few medical schools and residency programs offer distinct courses or provide mentored experiences in caring for dying patients.[10-12] The SUPPORT study documented serious shortcomings in communication between physicians and patients, and found that many physicians had no knowledge of patients' preferences at the end of life.[2] Other studies have found that physicians lack knowledge about assessing and controlling death-related symptoms such as pain and psychological distress.[1,12-14]

Most patients lack knowledge about the realities of dying and the limitations (as well as the abilities) of technology.[15] When physicians cannot communicate these realities, patients may not realize that they are on a short death trajectory or may not suspect the increasing futility of the care being offered. Finally, attitudes and practices relative to death and dying are influenced by culture and religion, and may affect the quality of care physicians provide to dying patients and their families.[16] Previous Hawaii-based studies of consumers found significant ethnic differences in willingness to talk about death, completion of advance directive, desire to die at home, and opinions regarding the use of hospice services.[9,17]

There is concern that the public's support of physician-assisted suicide (PAS) and physician-assisted death (PAD) stems from their fears about being kept alive after much functioning and intellect are gone, dying in pain, and burdening loved ones at the end of life.[12] In fact, consumer support for PAS and PAD appear to be on the increase in the United States, although support is lower among minority Americans than among Caucasian Americans.[18] A population-based consumer survey in Hawaii suggested that two-thirds of adults support PAS and PAD. However, when asked if policy efforts should be focused on improving end-of-life care, rather than on legalizing PAS, 52% agreed.[9] From the physician side, a 1996 study found that less than 30% of Hawaii doctors would agree to personally perform PAS or PAD.[19]

For several years, Hawaii has been looking at the "living and dying with dignity" issue and a governor-supported commission has called for improvement. In 1999, a statewide coalition called Kokua Mau, comprised of about 150 agencies and individuals, was funded by the Robert Wood Johnson Foundation to continue research, increase access to spiritually and culturally acceptable care at the end of life, and initiate public and professional education in order to improve care of the dying. The current survey was developed in part to assess physicians' perceptions of barriers to good end-of-life care, and it is hoped that our data can support the development of interventions which will help overcome these barriers.

Methods

Respondents

We selected respondents from a Hawaii Medical Association database that includes both members of the organization and nonmembers. We excluded retired physicians, trainees, and physicians practicing outside of the state. We included physicians in specialties most likely to be involved in the care of patients with terminal illness, such as family practice and internal medicine with all of its subspecialties (e.g., oncology, cardiology, pulmonology, geriatrics). We excluded physicians in specialties least likely to be involved in end-of-life care (e.g., dermatology, obstetrics/gynecology, psychiatry, surgery).[4,20-22] Of the 867 physicians sent questionnaires, 18 had retired, 13 had moved out of state or had no forwarding address, 26 were participating in an excluded specialty, and 6 returned empty envelopes or blank surveys. Of the remaining 804 physicians, 367 (46%) returned a completed questionnaire.

Measures

Our 19-item questionnaire was based on the literature[12,23] and pilot testing. The survey asked about: respondent characteristics (ethnicity, religion, specialty, years practicing medicine, place of practice); number of terminally ill patients cared for in the past year and their place of death; use of hospice; respondent opinion on when to begin discussions about end-of-life preferences and who should first tell a patient about a terminal condition; perceived barriers to talking about end-of-life preferences; perceived barriers to providing good end-of-life care; training in end-of-life care; knowledge of a new 1999 Hawaii law on advance directives; preferences for receiving medical information; and support of the concepts of physician-assisted suicide and physician-assisted death. Responses to questions on barriers were given on a five-point Likert scale ranging from 1=not much a barrier to 5=very much a barrier. The survey defined physician-assisted suicide as "providing a competent, dying patient who requests it with a prescription for medicine for the patient to use with the primary intention of ending his/her own life" and physician-assisted death as "giving a competent dying patient who requests it a lethal injection with the primary intention of ending the patient's life."[4]

Following approval by the University of Hawaii Human Subjects Committee, the survey was mailed to the 867 eligible physicians on June 1, 2000. Reminder postcards were mailed 2 weeks later, followed by a second questionnaire mailed to nonrespondents a month after the initial mailing. All responses received before August 15, 2000 were included in the analysis. The physicians were assured that their responses would be confidential and anonymous in the cover letter. Nonrespondents were tracked by the use of code numbers preprinted on return envelopes. When each questionnaire was returned, the researcher removed it from the envelope, logged in the code number, and then destroyed the envelope. The questionnaires were then assigned consecutive identification numbers for the purpose of data entry and analysis. We were not able to compare the characteristics of the respondents and nonrespondents, as no demographic data were available on nonrespondents.

Statistical Analysis

Responses were entered into Epi-Info, a public-domain program, and subsequently converted into SPSS-PC for statistical analysis. Means and frequencies were calculated. For the questions on barriers, we collapsed the Likert-scaled ratings into two categories: a rating of 4 or 5 was recoded as "agree" and all other responses recoded as "disagree." Differences between subgroups of physicians (e.g. by ethnicity, religion, and number of terminal patients cared for in past year) were tested using chi-square. Bivariate correlation tests were used to gauge the strength of association between selected variables.

Results

Respondent Characteristics

The characteristics of respondents based on primary specialty, ethnicity, and religion are provided in Table 1. The majority were from internal medicine (72%) or family practice (23%). To discern place of practice, we asked where they saw most of their patients; 74% reported seeing most of their patients in their private offices, 14% said HMO, 9% said hospital or long-term care facility, and 9% said clinic (11 respondents checked two response options). Ethnically, 31% were Caucasian, 26% were Japanese, 18% were Chinese, 8% were Filipino and 6% were Hawaiian. In terms of religion, 10% were Buddhist, 19% Catholic, 37% other Christian, 4% Jewish, 15% other religions, and 9% reported no formal religious affiliation. Average years in practice was 18.4 years (range 1 to 64 years). Number of terminally ill patients seen in the past year varied; 11% reported seeing none, 27% reported seeing 1 to 4, 45% reported seeing 5-14, and 17% reported seeing 15 or more terminally ill patients.

Place of Death and Use of Hospice

We asked physicians who reported seeing terminally ill patients in the past year to estimate which percentage died in various settings; averaging responses suggested that 48% of patients died in acute care, 34% at home, and 28% in nursing/care homes. Hospice care is provided in all three of these settings, and 21% of respondents reported that over half of their terminally ill patients were attended by hospice at death. Correlating years practicing medicine and percent of patients referred to hospice, we found a significantly negative relationship between the two variables, suggesting that more recently graduated physicians were referring more patients to hospice ($r = -.22$, $p < .01$). We also found a significant correlation between percent of patients dying at home and percent of dying patients attended by hospice ($r = .44$, $p < .01$). No association was found between use of hospice services and physician religion or ethnicity.

Barriers to Providing and Talking about End-of-Life Care

Almost all (95%) respondents stated that physicians should be the first to tell a patient that he/she is dying (not shown in table). When asked about the best time to approach patients regarding end-of-life preferences, 35% of respondents chose middle age, regardless of health status. Other options included greater than 65 years of age (19%), when diagnosed with serious illness (18%), when patient/family suggests it (11%), less than 6-month prognosis (9%), and clearly near death (5%).

Respondents were asked to rate the extent to which specific issues were barriers to providing good end-of-life care and talking to patients about end-of-life preferences (Table 2). The most fre-

Table 1.—Sample characteristics (n=367)

	n (%) of respondents	
Primary specialty		
IM	263	(71.7)
FP	83	(22.6)
GP	14	(3.8)
Other	7	(1.9)
Ethnicity		
Caucasian	115	(31.3)
Chinese	66	(18.0)
Filipino	28	(7.5)
Japanese	96	(25.9)
Hawaiian	21	(5.7)
Other	31	(8.4)
Missing data	10	(2.7)
Religion		
Buddhist	37	(10.1)
Catholic	69	(18.8)
Other Christian	135	(36.8)
Other religion	56	(15.3)
No religion	33	(9.0)
Missing data	37	(10.1)
Average years in practice	18.4	(range 1-64)
Place of practice		
Clinic	32	(8.7)
Private office	272	(74.1)
HMO	48	(13.7)
Acute or LTC setting	35	(9.5)
# terminally-ill patients cared for in past year		
None	37	(10.1)
1-4	96	(26.1)
5-14	162	(44.1)
15+	63	(17.2)
Missing data	9	(2.4)
Mean percent of deaths in each setting		
Home		34.3
Nursing/care home		28.4
Acute care		46.8
Percent of patients who died under hospice		
<25	174	(49.2)
25-49	61	(17.2)
50-75	50	(14.1)
>75	24	(6.8)
Missing data	45	(12.7)

quently indicated barrier in both categories was family conflict about best course of action, 71% and 60%, respectively. Next were patient/family discomfort with or fear of death (71% and 59%, respectively) and cultural/religious beliefs of patient or family (47% and 41%, respectively). Number and percent of physicians agreeing with other perceived barriers are provided in Table 2.

Training and Knowledge Questions

Overall, 57% of respondents stated that they had received training in end-of-life care in one or more settings, most frequently through Continuing Medical Education but also through medical school or residency/fellowship opportunities. Only 20 (5%) reported having attended the AMA-sponsored program EPEC (Educating Physicians in End of-Life Care), offered several times a year in Hawaii. The most preferred way to receive information about advances in medicine and healthcare was through journals (42%), followed by 1-hour lunch meetings (33%), seminars (19.3%), internet (10.4%), and CD-Rom (6%). About two-thirds said they were familiar with the 1999 changes in Hawaii law concerning advance directives and healthcare instructions.

Table 2.—Perceived barriers to providing and talking about end-of-life care

	Providing good care n (%)	Talking about Preferences n (%)
Family conflict about best course of action	264 (71.9)	224 (60.4)
Patient/family discomfort with or fear of death	260 (70.8)	216 (58.9)
Cultural or religious beliefs of patient or family	172 (46.9)	151 (41.1)
Provider time constraint	96 (26.2)	139 (37.9)
Financial barrier		
a. Patient	133 (36.2)	
b. Provider		75 (20.4)
Provider discomfort with or fear of death	112 (30.5)	91 (24.8)
Language barrier	73 (19.9)	74 (20.2)
Lack of continuity of care across settings	97 (26.7)	NA
Lack of provider knowledge of hospice and palliative care	92 (25.1)	NA
Fear of litigation	81 (22.1)	NA
Lack of hospice and palliative care services	71 (19.3)	NA

Table 3.—EOL training, preferred way to receive information, and awareness of Hawaii's new healthcare directive law.

	n	(%)
Percent with training on EOL care	208	(56.7)
Medical school	69	(18.8)
CME	101	(27.5)
-EPEC	20	(5.4)
Residency/fellowship	79	(21.5)
Preferred way to get medical information		
Journal	154	(42.0)
1-hour lunch meetings	121	(33.0)
Seminar	71	(19.3)
Internet	38	(10.4)
CD-Rom	22	(6.0)
Awareness of Hawaii's new healthcare directive law	243	(66.2)

Support of Physician-Assisted Suicide (PAS) and Physician-Assisted Death (PAD)

Support for the concepts of PAS and PAD are shown in Table 4. Overall, 32% of respondents supported PAS (providing a competent, dying patient who requests it with a prescription for medicine for the patient to use with the primary intention of ending his/her own life) and 18% supported PAD (giving a competent dying patient who requests it a lethal injection with the primary intention of ending the patient's life).

Table 4.— Support for the concepts of physician-assisted suicide and physician-assisted death, by ethnicity/religion

	Support PAS n (%)	Support PAD n (%)
Overall N=367	116 (31.6)	65 (17.7)
Ethnicity		
Caucasian (n=115)	51 (44.3)	24 (20.9)
Chinese (n=66)	20 (30.3)	13 (19.7)
Filipino (n=28)	2 (7.1)	1 (3.6)
Hawaiian (n=21)	6 (28.6)	1 (4.8)
Japanese (n=96)	28 (29.2)	20 (20.8)
Other/Mixed (n=31)	7 (22.6)	6 (19.4)
Religion		
Buddhist (n=37)	13 (35.1)	10 (27.0)
Catholic (n=69)	15 (21.7)	9 (13.0)
Christian (n=135)	36 (26.7)	18 (13.3)
Jewish (n=13)	6 (46.2)	2 (15.4)
None (n=33)	14 (42.4)	12 (36.4)
Other (n=25)	25 (44.6)	12 (21.4)

Magnitude of support varied, however, by physician ethnicity and religion. Among ethnic groups, Caucasian respondents were the most supportive of PAS (with 44% saying "yes) and Filipinos were least supportive (with only 7% saying "yes") and this difference was significant (χ^2=25.01, p<.01). Religious differences were significant too, as Catholic and other Christian respondents were more likely to say "no" to PAS than respondents with another, or no formal, religious affiliation (χ^2=20.21, p<.05). For PAD, greatest support was seen in Caucasian and Japanese (21% in each group said "yes") and the least support was reported by Hawaiians and Filipinos (only 4-5% in each group said "yes") (χ^2=30.43, p<.01). Individuals with no formal religious affiliation were most supportive of PAD (36%) while Catholics and other Christians were least supportive (13% each) (χ^2=19.53, p<.05). No statistical differences in support of PAS and PAD were detected by physician specialty, years in practice, and number of terminally ill patients cared for in the past year.

Discussion

Our findings suggest that only a minority of Hawaii physicians support PAS (32%) and PAD (18%). Support among Hawaii physicians is similar to the national figures, albeit both nationally and locally, support varies by ethnicity (with less support among minorities) and religion (with less support among Catholics). Of interest, however, is the generally consistent gap between physicians and consumers in the magnitude of support for PAS and PAD. Nationally and locally, about two-thirds of consumers support PAD/PAS,[18,24] whereas physician support rarely exceeds 40%.[4,20-22] There are likely to be multiple reasons why physicians are less supportive of PAS/PAD than consumers. But if consumer support is being driven by consumer fear of poor end-of-life care,[12] physicians will need to join efforts to improve care for the dying.

A method for improving care is to increase physician-consumer dialogue about end-of-life preferences, and to start these discussions before a patient has a health crisis. Physicians are expected to initiate this dialogue for two reasons. First, physicians see end-of-life care as their domain. In a national study of physicians associated with the Veterans Administration system, 82% felt they should be responsible for starting discussions about end-of-life preferences[23] and, in the current survey, 95% of Hawaii physicians said that the physician should be the first to tell a patient he/she is dying. Second, consumers want their physicians to initiate this discussion, and prefer to have it initiated when they are middle-aged and not yet critically ill.[25] Unfortunately, only 35% of our respondents concurred that middle age was the preferred time to begin discussions about preferences. Fully 15% felt they should wait to discuss end-of-life preferences until the patient was close to death (6 months or less) or very near death, and another 18% would wait until the patient was diagnosed with a serious illness.

Family conflict was seen as a major barrier to talking about preferences and providing good end-of-life care. However, if preferences are discussed and a surrogate is appointed early (before a health crisis occurs), perhaps conflict can be avoided or diminished. Hawaii's 1999 advance directive law (of which only 66% of our respondents were aware) includes a fine against the physician who does not follow a patient's expressed wishes, regardless of a family's threats.[26] There will still be cases in which individuals, once ill, may change their minds about a course of action, but the new law allows new preferences to be documented and a new proxy to be appointed. Some family conflict will still occur, and physicians will need to be honest about the dying process and stress that "doing everything" will not change the final outcome and may, in fact, be burdensome and painful to the dying person.[27]

Efforts to increase physician skills in communicating with patients about end-of-life issues are already underway. Nationally, principles for care of patients at the end of life, developed in 1997 by 13 organizations including the American Medical Association (AMA) and the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO), are in the process of being adapted and adopted by specialty groups.[28] The AMA has produced a continuing education program, Educating Physicians on End-of-Life Care, which is offered several times a year in Hawaii. The U.H. John A. Burns School of Medicine requires its first-year students to rotate through hospice and is incorporating more training in patient communication, end-of-life care, and bioethics into its curriculum.[29] The current survey, which found an association between recent graduation from medical school and use of hospice provides evidence for the effectiveness of early training in end-of-life care. It was also gratifying that provider discomfort with or fear of death was not perceived to be a large barrier; only 25% saw it as a barrier to talking about preferences and only 31% saw it as a barrier to providing good end-of-life care.

Even when advance directives are in place and discussions have

occurred, the literature notes that the actual decision making that precedes death is more complicated than just following documented preferences. An article presenting a "rethinking" of the SUPPORT findings lists four reasons why this is so.[30] First, patient preferences are not stable; rather they evolve as patients confront new situations and new information is received. Second, many decisions get made in the course of patient care, and it is in retrospect, usually, that a particular set of decisions is seen as pivotal in precipitating the unnecessarily painful or prolonged death. Third, for hospital-based patients, players (patients, families and physicians) tend to go along with "the program" rather than advocate for less aggressive care, and families tend to feel guilty if they do not ask for everything to be done for the dying person. Finally, the SUPPORT investigators now doubt their hypothesis that players want to, or are able to, make care decisions based on prognostic estimates and preferences of a specific patient. Rather, it is more likely that role expectations for doctors and families to do everything to save the life of the patient will prevail.

Thus, the SUPPORT investigators join with other authors to suggest that drastic improvements in end-of-life care may only occur with changes to the structure and financing of care. There is a recognition that the medical culture and the health care environment encourage heroic and aggressive treatment, and that financial incentives often motivate hospitals and doctors to provide invasive interventions to dying patients whether they want them or not, quite in contrast to the model of palliative care where patients are allowed to die in peace and with dignity.[6-8,30]

Despite this growing recognition of systems barriers to good end-of-life care, it is interesting that the top three barriers for Hawaii physicians were patient/family-related. The survey queried about several potential systems barriers. However, only 20% of physicians felt that lack of reimbursement was a barrier to talking about end-of-life preferences. In relation to providing good end-of-life care, only 36% of physicians saw a patient's financial constraints and only 22% saw fear of litigation as barriers. In the era of managed care, not surprisingly, 38% found time constraints as a barrier to talking about end-of-life preferences with patients and 26% identified that to be a significant barrier in providing good care. As patients with critical illnesses have multiple specialists caring for them, 26% found lack of continuity of care across settings as a barrier. Although the state is serviced by seven hospice organizations, 19% of respondents felt that lack of hospice and palliative care services was a significant barrier to providing good care.

Returning to the top three barriers, however, Hawaii physicians reported that patient/family discomfort with death and their cultural/religious beliefs challenged physician ability to talk about and provide end-of-life care. In fact, previous surveys of Hawaii consumers have noted significant ethnic and religious differences in willingness to talk about death, completion of advance directives, preference for place of death, desire for hospice care, and support of PAS and PAD.[9,24] Ethnic and religious differences in support of PAS and PAD were seen for physicians as well. Again, the only way to reduce these barriers is to learn more about cultural and religious beliefs in general,[16] through reading and talking with representatives of those cultures/religions, and to learn more about specific patient/family beliefs by talking to them.[27] The issue of cultural difference also raises issues for the legalization of PAS and PAD. Studies from across the country have found that support for these end-of-life options associates significantly with physician characteristics (ethnicity, religion, age, specialty) and attitudes.[4,20-22] Based on this finding, many warn that legalization of PAS and PAD will "open the door to abuses of vulnerable patients on the basis of age, poverty, mental disorders, or lack of resources for palliative care."[12-13,31]

Our study was limited by its relatively low response rate (46%), especially given the efforts taken to follow-up with nonrespondents. Other studies of physician support for PAS/PAD enjoyed response rates in the range of 60-80%.[4,13,20-22] Similarly to other authors, we were unable to test differences between respondents and nonrespondents. It is likely, however, that respondents to the Hawaii survey were more aware of and interested in palliative care approaches than nonrespondents. This is evidenced by the unexpectedly high rate in-home death reported by our respondents. Specifically, respondents said that, on average, 34% of their patients died at home and only 47% of their patients died in the hospital. Data reported by the Department of Health, in contrast, note that only 21% of deaths occur at home and that 63% occur in the hospital.

It is likely that efforts on several fronts will be required to improve care to the dying and, perhaps, reduce consumer support for physician aid in dying. Health professionals need to initiate dialogues with their patients, consumers need to discuss these issues with family members and choose surrogates, and structural changes to health care financing and standards will need to be made. Given that Hawaii physicians' top three barriers to improving end-of-life care were patient/family-related (conflict, discomfort/fear of death, cultural/religious beliefs), a good place to start is with dialogue and discussion. Educational efforts that facilitate communication must be supported.

Acknowledgments

This survey was conducted under the John A. Hartford/American Federation for Aging Research, Medical Students Geriatric Scholars Program directed by Patricia L. Blanchette, MD, MPH, Professor and Director of the Geriatric Medicine Program, John A. Burns School of Medicine (JABSOM). Additional funding was provided by the Office of Public Health Studies, JABSOM. Acknowledgments are tendered to Kamal Masaki, MD and Victor Valcour, MD of JABSOM's Geriatric Medicine Program for their mentorship and support, to Becky Kendro of the Hawaii Medical Association for access to their database, and to Carol Matsumiya of the U.H. Center on Aging for administrative assistance. Special thanks to Drs. Len Howard, Carol Joseph, Richard Kasuya, Anthony Lenzer, Glen Rediger, Damon Sakai, and Seiji Yamada who assisted in pretesting the survey.

References

1. Solomon MZ, O'Donnell L, Jennings B, Guilfoy V, Wolf SM, Nolan K, Jackson R, et al. Decisions near the end of life: professional views on life-sustaining treatments. Am J Public Health 1993;83:4-23.
2. Connors AF, Dawson NV, Desbiens NA, Fulkerson WJ, Goldman L, Knaus WA, et al. A controlled trial to improve care for seriously ill hospitalized patients. JAMA 1995;274:1591-8.
3. Field MJ, Cassel CK. Approaching death: improving care at the end of life. Washington, DC: National Academy Press. 1997.
4. Meier DE, Emmons C, Wallenstein S, Quill T, Morrison RS, Casssell C. A national survey of physician-assisted suicide and euthanasia in the United States. N Engl J Med 1998;338:193-201.
5. Tolle SW, Rosenfeld AG, Tilden VP, Park Y. Oregon's low in-hospital death rates: what determines where people die and satisfaction with decision on place of death? Ann Intern Med 1999;130:681-5.
6. Callahan D. Once again, reality: now where do we go? Hasting Cent Rep 1995;25:S33-6.
7. Brody H. The best system in the world. Hasting Cent Rep 1995;25:S18-21.
8. Annas GJ. How we lie. Hastings Cent Rep 1995;25:S12-14.
9. Braun KL, Onaka AT, Horiuchi BY. End of life preferences in Hawaii. Haw Med J 2000;59:440-6.
10. Hill, TP. Treating the dying patient: the challenge for medical education. Arch Intern Med 1995;155:1265-9.
11. Carrron AT, Lynn J, Keaney P. End-of-life care in medical textbooks. Ann Intern Med 1999;130:82-6.
12. Foley KM. Competent care for the dying instead of physician-assisted suicide. N Engl J Med 1997;336:54-7.

Continues on p. 47

Mammograms

Not just once, but for a lifetime



The National Cancer Institute has free booklets about breast cancer screening. For answers to your questions about cancer and to order these publications, call NCI's Cancer Information Service at **1-800-4-CANCER** (1-800-422-6237).

Persons with TTY equipment, dial 1-800-332-8615.

Visit NCI's website for patients and the public at **http://rex.nci.nih.gov**

News and Notes Henry N. Yokoyama MD

Potpourri I...

Giving a sermon one Sunday, I heard two teenage girls in the back giggling and disturbing the people.

I interrupted my sermon and announced sternly, "There are two of you here who have not heard a word I've said." That quieted them down...

When the service was over, I went to greet people at the front door. Three adults apologized for going to sleep in church, promising it would never happen again...

Rev William Ross

— — — — —

The husand of one of my OB patients phoned the doctor to ask if it would be OK to make love to his wife while taking medication for an infected foot.

"Yes, that's fine," the doctor replied. "Just don't use your foot."

Sabrina Henderson

— — — — —

I feel inadequate when talking to a mechanic, so when my car started making a strange noise, I sought the help of a friend who drove the car around the block, listened carefully and then told me how to explain the difficulty when I took it in for repair.

At the shop, I proudly recited, "The timing is off and there are premature detonations, which may damage the valves."

As I smugly glanced over the mechanic's shoulder, I saw him write on his clip board, "Lady says it makes a funny noise."

Potpourri II...

Quick Thinking...

A resident I trained with many years ago was known for his resourcefullness and quick thinking...

One day he was injecting the dye for an IV pyelogram when almost halfway through, he realized the injection had gone "interstitial."

Without hesitation, he moved to the other arm and started injecting while making the following statement: "And now for the other kidney."

Dr. Gabriel Thomasse
"Stitches" Sept 2000

— — — — —

As a passenger ship passed a small island, a bearded man could be seen shouting and furiously waving his arms... "What is that?" a passenger asked the captain. "I have no idea, " the captain replied. "But every year when we pass, he goes nuts."

"Playboy Party Jokes" Sept 2000

— — — — —

The doctor looked up from his papers and said, " I have some good news and some bad news."

"Well, give me the good news first," the patient said...

"We're going to name a new disease after you."

— — — — —

"Mommy, what's an orgasm?" the little boy asked.

"I don't know dear," the woman replied. "Ask your father."

Potpourri III...

A married couple was driving down the interstate when the wife said, "Herb, I want a divorce." The husband said nothing but slowly increased his speed...

"I've been having an affair with your best friend," she continued. "And he's a better lover than you are. I want the house, the kids, the car, the checking account and the credit cards. Is there anything you want?" she finally asked.

"No, I have everything I need."

"You do?" she asked wondering...

"Just before they hit the wall at 90 mph he replied, "Yep, I've got the air bag."

— — — — —

Hearing about a dinosaur alive in the rain forests of South America, a professor launched a scientific expedition. After several weeks he stumbles upon a little man clad in loin cloth and standing next to a 300 foot long dead dinosaur...

"Did you kill the dinosaur?" the scientist asked...

"Yep," replied the rain forest native...

"But it's so big and you're so small! How did you kill it?"

"With my club," the primitive fellow answers...

"How big is your club?"

The little man replies, "Well, there are about 100 of us."

— — — — —

Q. "How many chiropractors does it take to change a light bulb?"
A. "Only one, but it takes six visits."

— — — — —

"What makes a man so smart during sex?"
"He's plugged into a genius."

Potpourri IV...

An asteroid hits the speakers platform at a Seattle center... Al Gore, George W. Bush and Bill Gates all arrive in Heaven at the same time. They are greeted by God on his golden throne... who first asks Gore what he believes in... "I believe in the Internet and a clean environment." "Very good," says the almighty. "Come sit near me." Then he asks George Bush the same question. "I believe in cutting taxes and taking good care of the military."

"Excellent," says God. "Come sit near me." Then he asks Bill Gates what he believes." "I believe" Gates replies, "You're sitting on my chair."

— — — — —

During medical rounds, the attending pointed to an Xray and asked the intern, "As you can see, the patient limps because his left fibula and tibia are both radially arched. Michael, what would you do in a case like this?"

"Well," pondered the intern, "I suppose I'd limp too."

Potpourri V...

The doctor noted that his patient had the smallest penis he'd ever seen... "Do you have any difficulties because of the size?" he asked.

"No," the guy said. "I have a great wife and three kids. The only problem I have is finding it when I need to pee...

"And your sex life is normal:"

"Of course," he replied, "because then there are two of us looking for it."

— — — — —

As he strolled a crowded street fair, the man came upon a palm reader. "First I'll read your love line and tell your romantic future," she said.

The man paid the money and the reader looked at his palm...

"I see you don't have a girl friend."

"That's true," he replied...

Examining his hand further, the seer remarked, "You are extremely lonely."

"Yes, that's true," the man admitted. "You can tell all that from my love line?"

"No, dearie," she said, "from the calluses."

— — — — —

A drunk stumbled upon a baptismal service by the river...

"Son, are you ready to find Jesus?" the cleric asked.

"Yes, Preacher, I sure am."

The minister ducked the fellow under the water and pulled him back up. "Have you found Jesus?" "No I haven't" the drunk replied.

The preacher ducked him again for a bit longer.

"Now, brother, have you found Jesus?" "No, not yet Reverend."

The preacher held him down for a full minute this time. "Have you found Jesus now?"

Gasping for air, the fellow blurted, "Are you sure this is where he fell in?"

Continues on next page

Medical Tidbits I...

Herb Watch

The popular herb echinacea (distant cousin of the ragweed) can produce a severe allergic reaction. Dr. Raymond Mullins (from Australia) reported to the American Academy of Allergy, Asthma and Immunology that echinacea may be responsible for hives, acute asthma or anaphylaxis...

— — — — —

Blood Pressure Alert

The National Heart, Lung & Blood Institute (NHLBI) had to stop its study when one of the drugs was significantly less effective in reducing cardio-vascular disease... CARDURA (the alpha blocker dexazosin) had 25% more cardio-vascular events and patients were twice as likely to be hospitalized for heart failure...

NHLBI advises that hypertensive patients on alpha blockers (including Hytrin and Minipres) should see their physicians for alternative drugs...

Medical Tidbits II...

Acute respiratory distress syndrome usually occurs in pnemonia, but can also occur in trauma patients, eg auto accidents and patients who had complications in major surgery...

Each year, an estimated 100,000 patients of all ages develop this syndrome and about 1/2 die... A new study shows that physicians in ICU may be able to save many such patients in ICU by lowering the respirator rate...

Thomas Stewart, director of ICU at Mount Sinai, however, says, "Lowering the airway pressure may not be the best treatment for all conditions..."

References, continued from p. 44

13. Ganzini L, Fenn DS, Lee MA, Heintz RT, Bloom JD. Attitudes of Oregon psychiatrists toward physician-assisted suicide. Am J Psychiatry 1996;153:1469-75.
14. Von Roenn JH, Cleeland CS, Gonin R, Hatfield AK, Pandya KJ. Physician attitudes and practice in cancer pain management: a survey from the Eastern Cooperative Oncology Group. Ann Intern Med 1993;119:121-6.
15. Kaufman SR. Intensive care, old age, and the problem of death in America. The Gerontologist 1998;38:715-25.
16. Braun KL, Pietsch JH, Blanchette PL. (Eds.) Cultural issues in end-of-life decision making. Thousand Oaks, CA: Sage Publications. 2000.
17. Braun KL. Cultural issues in death and dying. Haw Med J 1996;55:260-4.
18. Benson JM. The polls-trends; end-of-life issues. Pub Opinion Q 1999;73:273-7.
19. Siaw LK & Tan SY. How Hawaii's doctors feel about physician-assisted suicide and euthanasia: an overview. Haw Med J 1996:55;296-8.
20. Bachman JG, Alcser KH, Doukas DJ, Lichtenstein RL, Corning AD, Brody H. Attitudes of Michigan physicians and the public toward legalizing physician-assisted suicide and voluntary euthanasia. N Engl J Med 1996;334:303-9.
21. Lee MA, Nelson HD, Tilden VP, Ganzini L, Schmidt T, Tolle SW. Legalizing assisted suicide: views of physicians in Oregon. N Engl J Med 1996;334:310-5.
22. Cohen JS, Fihn SD, Boyko EJ, Jonsen AR, Wood RW. Attitudes toward assisted suicide and euthanasia among physicians in Washington state. N Engl J Med 1994;31:89-94.
23. Markson L, Clark J, Glantz L, Lamberton V, Kern D, Stollerman G. The doctor's role in discussing advance preferences for end-of-life care: perceptions of physicians practicing in the VA. J Am Geriatr Soc 1997;45:399-406.
24. Braun KL. Do Hawaii residents support physician-assisted death: a comparison of five ethnic groups. Hawaii Med J 1998;57:529-34.
25. Miles SH, Koepp R, Weber EP. Advance end-of-life treatment planning: a research review. Arch Intern Med 1996;156:1062-8.
26. Pietsch JH. Frequently asked questions (and answers) about Hawaii's new uniform health care decisions act (modified). Haw Med J. 1999;58:277-81.
27. Kogan S, Blanchette PL, Masaki K. Talking to patients about death and dying: improving communication across cultures. In: Braun KL, Pietsch JH, Blanchette PL. eds. Cultural issues in end-of-life decision making. Thousand Oaks, CA: Sage Publications. 2000.
28. Cassel CK, Foley KM. Principles for care of patients at the end of life: an emerging consensus among the specialties of medicine. Milbank Memorial Fund. 1999.
29. Sakai, D. Personal communication, September 18, 2000.

Schering/Key Pharmaceutical

Claritin-D 12 Hour
(5 mg loratadine/120 mg pseudoephedrine sulfate, USP)
Extended Release Tablets

Claritin-D 24 Hour
(10 mg loratadine/240 mg pseudoephedrine sulfate, USP)
Extended Release Tablets

Claritin RediTabs
10 mg (loratadine rapidly-disintegrating tablets)

Claritin Syrup
(loratadine) 10 mg per 10 mL

Once-a-day nasonex (mometasone furoate monohydrate) Nasal Spray, 50 mcg

Claritin 10 mg TABLETS (loratadine)

Tequin gatifloxacin

Velvet Agena-Chee
Senior Sales Representative
Voice Mail (800) 782-2347
Box 3858

Donn keoki Arizumi
Pharmaceutical Representative
Voice Mail (800) 544-5420
Box 8058

Shawn Brady
Sales Representative
Telephone (808) 387-1409
Voice Mail (800) 554-5420
Box 1342
FAX (808) 373-1772
E-Mail shawn.brady@spcorp.com

Mark Buquoi
Sales Representative
Telephone (808) 384-3862
Voice Mail (800) 544-5420
Box 9795
FAX (808) 841-6105

Dennis M. Hamamura
Senior Pharmaceutical Rep.
Telephone (808) 671-0225
Voice Mail (800) 544-5420
Box 8774
FAX (808) 671-0817

Carol K. Honda
Sales Representative
Voice Mail (800) 554-5420
Box 8322
FAX (808) 593-1776

Rachelle Hyde
Sales Representative
District Trainer
Voice Mail (800) 782-2347
Box 3861

Caroline Perry
Sales Representative
Voice Mail (800) 554-5420
Box 1274
E-Mail Caroline.perry@spcorp.com

Brian Souza
District Account Representative
Telephone (808) 394-9475
Voice Mail (800) 554-5420
Box 6811
FAX (808) 394-9475
E-Mail brian.souza@spcorp.com

Medical School Hotline, continued from p. 29

otherwise might catch us "off guard"), such training, properly applied, can actually help prevent the emotional "burnout" which could arise from caring for patients in any medical specialty.

Opportunities for graduate medical training at the University of Hawai'i are available to students interested in a psychiatric career. Responsive to community's needs, the Department of Psychiatry offers accredited residency programs in general psychiatry as well as in three out of the four psychiatric subspecialties recognized by the American Board of Medical Specialties, child and adolescent, geriatric, and addiction. The University of Hawai'i is also one of ten programs in the country offering a combined program leading to certification in the specialties of general pediatrics, general psychiatry, and child and adolescent psychiatry. This program strives to train physicians who can improve access to both primary care and mental health care for children and families, especially those who are currently underserved.

Above all, through enthusiasm, example, and mentorship (reaching out to all students, especially those from culturally diverse backgrounds), the faculty strives to be persuasive, rather than coercive, in introducing students to the virtues of psychiatry.

References:

1. Schroeder SA. Improving the health of the American public requires a broad research agemda. Acad Med. 1999;74:530-531
2. Matson CC, Ullian JA, Boisaibim EV. Integrating early clinical experience curricula at two medical schools: lessons learned from the Robert Wood Johnson Foundation's Generalist Physician Initiative. Acad Med 1999; 74:S53-S68.
3. John A. Burns School of Medicine, University of Hawai'i. General Guide to the M.D. Program 1999-2000.
4. Engel GL. The clinical application of the biopsychosocial model. *Am J Psychiatry.* 1980;137:535-544.
5. Glass RM. Mental disorders: quality of life and inequality of insurance coverage. *JAMA.* 1995;274:1557.
6. Spitzer RL, Kroenke K, Linzer M, et al. Health-related quality of life in primary care patients with mental disorders: results from the PRIME-MD 1000 study. *JAMA.* 1995;274:1511-1517.
7. American Academy of Pediatrics Task Force on Violence. The role of the pediatrician in youth violence prevention in clinical practice and at the community level. *Pediatrics.* 1999;103:173-181.
8. American Academy of Child and Adolescent Psychiatry. AACAP Work Force Fact Sheet. 2000.

WE COLLECT PAST DUE ACCOUNTS

Only 25%* fee for Health Care Firms!

Why give up more!

Wood & Tait

HI Collection & Detective Agency
Staff on Kauai, Oahu, Maui, & Hawaii
http://www.woodtait.com

739-0433

jwood@woodtait.com

*Applies to accounts assigned during this promotion; no restrictions as to dollar size or age of accounts. Fee will increase to 50% if litigation or forwarding required; you will receive a contract.

Medical Office For Lease

Aiea Medical Building
99-128 Aiea Heights Dr.
Suite 502

- Reception Area
- Private Office
- Two Exam Rooms
- Lab Area
- X-Ray Room
- Built In Cabinets
- Bathroom

AREA: 771 sf. **TERMS:** 3 to 5 years
GROSS RENT: $1,900 mo + G.E.T.
PARKING: Visitors free; one tenant stall included, additional stall available for $65 per month.
OCCUPANCY: Available Now
FOR SALE: Unit also available for purchase (LH)

Gary C. Cook (B)
808-526-0896

COLDWELL BANKER COMMERCIAL
PACIFIC PROPERIES

gccook@cbcpacific.com

When Rita Hayworth had Alzheimer's disease, not much could be done about it.



Today there's hope.

In Rita Hayworth's later years, her life was ravaged by a disease that few people recognized, much less knew how to treat – it was Alzheimer's.

Today there are treatments to manage Alzheimer's, including effective prescription medicines.

If you or someone you love:
- forgets things more and more
- asks the same question over and over
- has increasing trouble with words

it could be Alzheimer's disease – so see a doctor soon and call the Alzheimer's Association.

Unlike the past, today there's hope for people with Alzheimer's and their families.

ALZHEIMER'S® ASSOCIATION
Someone to Stand by You

In Hawaii, call 800-591-2771
www.alz.org

"GILDA" ©1946, renewed 1973 Columbia Pictures Corporation. All Rights Reserved. Courtesy Columbia Pictures.

MR463CA ©2000 Alzheimer's Disease and Related Disorders Association, Inc. All rights reserved. Supported by Eisai Inc. and Pfizer Inc.

Book Review, continued from p. 28

the scope of the book. Alternatively, many topic headings contain only one quotation. Most of these are obscure disorders or have marginal relevance to medicine. However, those searching for quotations about headaches or impotence, for example, might expect to find more on these subjects.

Medicine in Quotations is not the first book of its kind; at least three others have been published, most notably *Familiar Medical Quotations* by Maurice Strauss. As the editors explain in their introduction, this latest effort improves on its predecessors by including more recent quotations, a more detailed history of medical concepts, and more precise citations. Moreover, the book is extremely easy to navigate because the editors have taken pains to explain its arrangement and supply two exhaustive indexes, arranged by subject and author-citation.

Relying too heavily on these extensive reference tools, however, could detract from the reader's enjoyment of the book. Exciting and unexpected discoveries await those who read it haphazardly, and the search for a quotation under a particular topic heading can easily turn into an hour's reading of unrelated subjects.

Medicine in Quotations is a boon to medical writers, who will find within its pages a ready source of leads, interesting and amusing asides, and dramatic endings for their writing. Those who linger (and it is difficult not to) will also find that their knowledge and understanding of medical history and current issues is expanded as well. Physicians will encounter a steady stream of clinical descriptions, both historic and modern, intermingled with admonitions and affirmations regarding their profession. These selections are sometimes reassuring, sometimes challenging, and occasionally unsettling. Entries under the same topic heading often contain contradictory views, inviting readers to form or reform their own opinions.

As Norman Moore wrote in 1893 (what review of a book of quotations would be complete without a quotation?), "The true use of reading in medicine is to make him think.... Perfect knowledge is that which has been thought over; imperfect knowledge that which has only been remembered."

Dawn Chalaire

Dawn Chalaire is an Associate Scientific Editor in the Scientific Publications Office and the Managing Editor for the University of Texas M. D. Anderson Cancer Center's Physicians Newsletter.

Classified Notices

To place a classified notice:

HMA members.–Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.

Nonmembers.–Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Physician Wanted

BIG ISLAND OF HAWAII– Multi-specialty group practice seeking BC/BE OB/Gyn to service community of 35,000+; in breathtaking upcountry setting. Waimea is 15-20 minutes from beautiful uncrowded beaches and world class golf courses. Various start-up options available with partnership potential. Contact Linda (808) 885-9606 or fax (808) 885-9506. Aloha!

Locum Tenens

LOCUM TENENS– Board Certified FP available for the summer Locum Tenens office coverage. Please call Vadim Braslavsky, MD (913) 685-7494 or visit www.concentric.net/~locumdr/1.htm.

Aloha Laboratories, Inc.
...When results count

CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

David M. Amberger, M.D.
Laboratory Directory

Phone: (808) 842-6600
Fax: (808) 848-0663
E-Mail: results@alohalabs.com
http://www.alohalabs.com

Nurses the  *of Healthcare*

Registered Nurses, Licensed Practical Nurses, Medical Assistants
Qualified and experienced in a wide variety of job settings.

All applicants carefully screened and matched to your specific job.

We are fully responsible for payroll, taxes, benefits and insurance.

Kahu Malama Nurses, Inc.
Short & Long Term Staff Relief and Permanent Placement

Serving Hawaii since 1982

Available 24 hours

(808) 951-0111 Fax: 949-3834

Inter-island: 1-800-773-9021

e-mail: nurses@kahumalama.com

The Weathervane Russell T. Stodd MD

Remember, Inside Every Silver Lining There's A Dark Cloud.
Already we are in the new year, and the real beginning of the new millennium, as the last days of the 20th century drift into painful-election memory. Good news arrived from the American Academy of Ophthalmology telling us that persistent efforts have increased the 2001 Medicare Fee Schedule conversion factor by 4.5%. Also, changes in practice expense data submitted to HCFA early last year were accepted with positive changes for ophthalmology services. Of course, there is still no recognition that everyone practicing medicine in Hawaii has to accept a 4.17% gross excise tax liability for the privilege of working for our Democrat-run state government.

Okay! Let's Hear It For The Learned Intermediary!?
Historically, pharmaceutical houses have been shielded from litigation for adverse effects from their products under the umbrella of the physician as the "learned intermediary." The term originated in a 1966 legal case in which a patient suffered retinal damage from chloroquine. The legal ruling established a responsibility tree in which drug companies warn physicians about adverse effects, and physicians must serve as "learned intermediaries" to properly inform patients. Now this doctrine has been significantly altered. In the decision of *Perez vs. Wyeth Labs. Inc.*., the New Jersey Supreme Court ruled that the doctrine that drug companies have no legal obligation to warn about possible side effects does not apply when companies engage in direct-to-consumer advertising. The Court said that the effect of direct advertising of prescription drugs, means that physicians are often relegated to a passive role, and patients become actively involved in the decision to use a medication such as birth control pills, asthma or GI medications, drugs for erectile dysfunction, etc. While some doctors may be pleased that pharmaceutical houses now must share legal burdens, what it also illustrates is that the role of physician is further diminished in providing appropriate medical care.

If You Live To Be A Hundred, Your Lucky Number Goes Up By One.
Eye surgeons have seldom been reluctant to perform eye surgery on patients over 100 years, relying primarily on patients' needs, cerebration and compliance, to determine necessity. But how old is too old for anesthesia and for invasive procedures, major elective or emergency surgery? In a retrospective analysis of surgery on centenarians since 1993 at Methodist Hospital in Brooklyn, N.Y., involving 61 patients averaging 101.5 years (the oldest 111 years), the century mark did not prove a barrier. The mortality rate was 15%, while 51% were dischgarged to nursing homes, 30% to home health care, and 4% entered rehabilitation. Procedures included orthopedic, gastrointestinal, percutaneous gastroscopies, surgical endoscopies, and 28 other types of operations.

Come Here Kid! You Want Boobs, Big Muscles And Small Cojones?
Following the admission by Mark McGwire, baseball's home run king, that he takes androstenedione, an over-the-counter "dietary supplement," (banned by the NCAA, the NFL, the NBA, and Olympic games) kids have been taking the drug. Supposedly, andro is converted to testosterone in the body which builds muscles, but also has the side effect of facial hair growth and breast enlargement. Moreover, harmful effects can range from liver damage to hypertension and testicular atrophy. Just what you want for growing boys. An additional endocrine threat was noted in the 1999 survey by the group Monitoring the Future, which found that some 8th grade boys are using anabolic steroids! Although such drugs require a prescription, they are fairly easy to obtain underground. These athletes are really acting as their own guinea pigs in their efforts to build muscles. Many of those 250 and 300 lb high school football players bench pressing huge weights, didn't get that way naturally. Sadly, parents are often not aware that their offspring are taking muscle building drugs. My personal bias is that what eighteen-year-olds need is two years of universal military training. Look what it did for President Clinton —— oh, never mind.

Every Decent Man Is Ashamed Of The Government He Lives Under.
In an end-run around Congress, the Occupational Safety and Health Administration (OSHA) has come up with a new set of rules that will cost businesses billions of dollars a year. The claim is that new ergonomic standards for employers are needed to protect workers from job-related injuries. Such issues as soft tissue problems like carpal tunnel syndrome, aching backs and sore tendons are the targets. A handful of business groups filed suit to block the rules with the claim that OSHA coached paid experts on what to say at the public hearings, and didn't provide enough time for public comment. Congress made known its opposition to the standards by voting to keep them off the books until October 1, 2001, but that's not enough to stop the Clinton administration. By executive order Clinton will add 1600 OSHA pages to the federal register. According to the Employment Policy Foundation, businesses will spend an average of $780 per employee to bring work stations into compliance. Meanwhile, OSHA's own data reveal that ergonomic complaints have dropped from 3 million to 2 million per year since 1992 while lost work days dropped from 750,000 to 500,000 in the same period. Is this a last Clinton bone thrown to the unions who support these rules? What else?

When The Pilot Says Slight Delay Get Out Your Pillow.
Honolulu is not bad, and Kahului is very good, but for some major cities on the mainland, flight delays due to "taxi-out" time are large and growing. Nationwide, the number of delays has increased by 16% in the last four years. In 1999, 40,000 flights were delayed more than one hour after leaving the gate, and 264 flights waited on the tarmac for more than four hours before departure!! Newark, New York, Philadelphia and Chicago were the major offenders, sometimes due to weather, but also frequently due to logistics. Planes must move out of gates to allow space for incoming flights, then must park on the taxiway and wait for clearance from air traffic controllers.

Drive The Legal Speed limit, And Watch The Rest Of The World Roll by.
A recent study by the Insurance Institute for Highway Safety found that SUVs and pickup trucks have relatively high driver death rates in one-vehicle rollovers, which are due in large part to their high centers of gravity (not to mention Firestone tires). The statistics are somewhat skewed because they don't include other variables (age, sex, alcohol use, etc.), but death in an auto crash may depend on the vehicle you are driving. The most dangerous vehicles for driver death are Chevrolet Camaro, Pontiac Firebird, and Ford Explorer. Passenger vans get the best rates, led by Nissan Quest, Ford Windstar, and Dodge Caravan with the lowest death rates.

To Avoid Paying Taxes, Run For Congress.
According to IRS data, members of Congress and their staffs owe about $10.5 million in back taxes. In October 1999, the nonpayment rate for the House was 8%, and for the Senate 7%. IRS employees can be dismissed for not paying taxes, but no such rule exists for politicians. The balance of income tax owed by all federal employees is estimated at $2.4 billion!

Computers Can Never Replace Real Human Stupidity.
And an example of school rules gone more than slightly berserk, in Sayreville, New Jersey, officials suspended four kindergarten children who were caught playing cops and robbers. They were using their fingers for guns and said they were shooting at one another. That violated the school's zero tolerance policy toward weapons, and the sinners were sent home for three days.!

ADDENDA
- On September 19, 1890, for the very first time, rubber gloves were used during surgery at Johns Hopkins University Hospital.
- 46% of Americans say they are being left behind by technology. Of these, 16% say they don't care.
- If you eat beans with your Viagra you get a stiff wind.

Aloha and keep the faith —rts■

Contents of this column do not necessarily reflect the opinion or position of the Hawaii Ophthalmological Society. Editorial comment is strictly that of the writer.

Our pledge to you

As Straub physicians, we welcome your referrals... and pledge to:

- Report our evaluation to you promptly by phone, fax or mail (whatever you prefer).
- Never make secondary referrals without your approval.
- Always direct the patient back to you for continuing care.

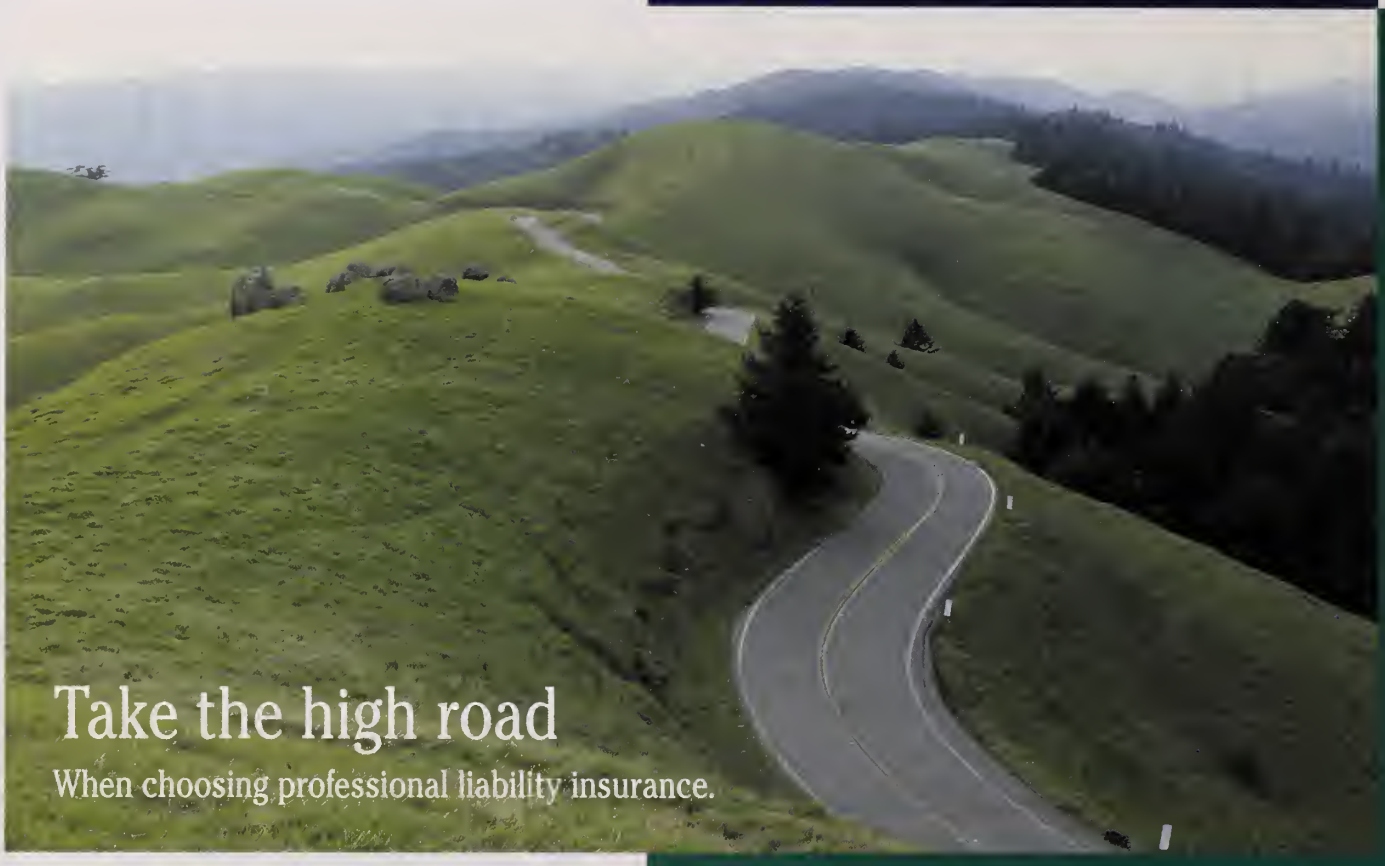
To make your referrals easy, we have a Physician Referral Specialist, Kym Kaohi. To contact Kym and to get a binder on Straub specialists and services, call 522-4444.





Straub
Partners in health
straubhealth.com

For assistance, call Kym at 522-4444



NO RATE INCREASE IN 2001

MIEC

Medical Insurance Exchange of California

6250 Claremont Avenue
Oakland, California 94618
800-227-4527
www.miec.com

HAWAII CLAIMS OFFICE:
1360 South Beretania Street,
Honolulu, Hawaii 96814

Rated "A" (Excellent) by A.M. Best

Sponsored by the Hawaii Medical Associatio

THE SAFEST ROUTE IS
WITH AN EXPERIENCED GUIDE.

In Hawaii, that's MIEC. We are the West's first physician-owned, not-for-profit professional liability insurer. For more than a quarter century, we've protected doctors with financially secure coverage. We're also known for our unsurpassed, consistent track record of returning dividend credits to policyholders, when operating results permit. We've returned over $200 million.

Hawaii Medical Journal
Vol. 60
No. 2
February 2001
Received on 03-12-01
Hawaii University Library

ity insurance is a
ionship. At MIEC,
nitment seriously.

ne original, MIEC.

HAWAII MEDICAL JOURNAL

1-SIZE
R15
H25x
SCI

March 2001 Volume 60, No. 3 ISSN: 0017-8594



Serials Dept
Sciences Library
Box 1
Brown University
Providence, RI 02912-0001

HAWAII MEDICAL ASSOCIATION 1856


1% ONCE A DAY
Noritate™
(metronidazole cream) Cream, 1%
PSORCON® e
(diflorasone diacetate cream) 0.05%
(diflorasone diacetate ointment) 0.05%
BENZAMYCIN® Topical Gel
(3% erythromycin, 5% benzoyl peroxide)
Klaron®
(sodium sulfacetamide lotion) 10%
DERMIK
Innovation that makes a world of difference
Our Mission: To become a global leader in providing innovative dermatological products to patients and healthcare providers.
To learn more, call 1.610.454.8110, or visit our site on the World Wide Web at http://www.dermik.com
Platinum Benefactor
Honor Society
Dermik Laboratories supports research in skin care through a grant to the Dermatology Foundation
DERMIK LABORATORIES, INC.
Dedicated to Dermatology™
A RHÔNE-POULENC RORER COMPANY

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
Vincent S. Aoki MD, Benjamin W. Berg MD, John Breinich MLS, Satoru Izutsu PhD, James Lumeng MD, Douglas G. Massey MD, Myron E. Shirasu MD, Frank L. Tabrah MD, Alfred D. Morris MD

Journal Staff
Editorial Assistant: Drake Chinen

Officers
President: Philip Hellreich MD
President-Elect: Gerald McKenna MD
Secretary: Calvin Wong MD
Treasurer: Paul DeMare MD
Past President: James Lumeng MD

County Presidents
Hawaii: David Camacho MD
Honolulu: William McKenzie MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Gardner Quarton MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 2001 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 56

Letter to the Editor 56

Medical School Hotline
Damon H. Sakai MD 58

Case of the Month
J. Kavolius MD, C. Matsumoto MD, P. Greatorex MD, and G. Petermann MD 60

DNR Orders in the OR
L. Tungpalan MD and S.Y. Tan MD, JD 64

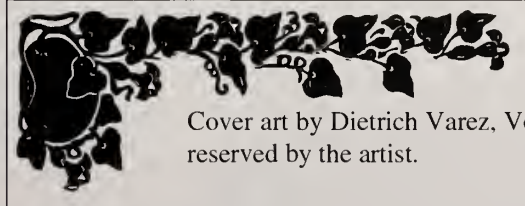
The Hawaii Diet: Ad Libitum High Carbohydrate, Low Fat Multi-Cultural Diet for the Reduction of Chronic Disease Risk Factors: Obesity, Hypertension, Hypercholesterolemia, and Hyperglycemia
Terry T. Shintani MD, JD, MPH, Sheila Beckham RD, MPH, Amy C. Brown PhD, RD and Helen Kanawaliwali O'Connor 69

Cancer Research Center Hotline
Laurence N. Kolonel MD, PhD 74

News and Notes
Henry N. Yokoyama MD 75

Classified Notices 77

Weathervane
Russell T. Stodd MD 78



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

Kuhi No Ka Lima, Hele No Ka Maka

Refers to a rule of hula: "Where the hand goes, the eye must follow."

Editorial

Norman Goldstein MD
Editor, Hawaii Medical Journal

This Issue

The primary authors of the two manuscripts in this issue are both physicians and attorneys as well as prolific writers.

The first manuscript reports on a small, influential group of subjects, including our Governor, some of his Cabinet members, a legislator, some business, political and community leaders and their diets.

Terry Shintani, MD, JD, MPH and his associates report an ad libitum high carbohydrate, low-fat, multi-cultural diet. The study lasted only three weeks but showed significant weight loss, reduction in systolic hypertension, total cholesterol, LDL and serum glucose. The Hawaii Diet, a part of the Hawaii Health Initiative, hopes it will prolong life even more in Hawaii, making us, as Governor Cayetano proposed, "the Healthy State."

In the next manuscript, S.Y. Tan MD, JD and medical student, L. Tungpalan review the Do Not Resuscitate policies in Hawaii hospital operating rooms. This is a very important subject and as our population ages in our Healthy State, it will be even more important. The authors offer some key guidelines including:

Overriding a patient's Do Not Resuscitate wishes may violate the right to self-determination, thus DNR orders should not be automatically suspended in the operating room.

Any changes in the patients Do Not Resuscitate wishes must be decided by the troika of the surgeon, anesthesiologist and patient.

The Journal thanks S.Y. for another significant ethical contribution and for completing a four-year term as Governor of the Hawaii Chapter of the American College of Physicians. The annual program, held Feb 9 and 10 in Honolulu, presented papers in various subspecialties of internal medicine, with a discussion by Jim Pietsch JD, co-author of the Elder Law Hawaii Handbook[1] on Living Wills and Advanced Directives; the report by President-elect William Hall MD, FACP on the ACP-ASIM College; and 32 Poster Presentations.

Look for some of the excellent papers and poster presentations in a future Special issue of the Journal.

Regular Columns

Henry Yokoyama MD is once again writing his ever - popular News and Notes. Glad to have you back again, Henry.

We also present two new columns.

Edwin C. Cadman MD, Dean of the John A. Burns School of Medicine, has already had great influence on medicine in Hawaii since joining the School in November 1999. Look for exciting activities, and plans for the future in Dean Cadman's column.

Carl-Wilhelm Vogel MD, PhD, Director of the Cancer Research Center in Hawaii, has also accepted a regular column, to be labeled "Cancer Center Hotline." There is much activity at the Center, as Gladys Brandt, the Board Member of the Friends of the Hawaii's Cancer Research Center points out, "the center is one of Hawaii's best-kept secrets." Thank you, Carl, for sharing you "secrets" with us.

1. Pietsch JH and Lee LH. *The Elder Law Hawaii Handbook Protecting Your Health Wealth and Personal Wishes.* Honolulu, Hawaii: University of Hawaii Press; 1998.

Letter to the Editor

Dear Norm,

Years ago, you had something in the HMJ - or one of your lectures - it was re: one's receptionist - and you said that "she should have flowers in her voice." Do you remember that? I clipped it and kept it on my desk for years - finally, I have such a receptionist - she has one or two flaws - like showing up for work at the last minute - but the patients love her - and she loves them she really does - the other day Andy - a 21 yo with lamellar ichthyosis who works in a lumber yard had heat stoke and his mother called to say he was being rushed to the ER unresponsive - actually he did fine - but Corinne took the call and came into my room crying to tell me...

Random Tulips

Our local hospice has this letterhead on its stationary - "Practice Random Acts of Kindness." Although I'd seen the phrase before, I never considered how powerful these might be, until I witnessed such a random act.

Mrs. M. has been my patient for over two years. At 89 pounds, she's a shy, secretive, diminutive 79 year-old grandmother who carries the cross of parasitophobia - a strange malady which manifests itself in the delusional belief that one's skin is infested with various types of bugs; in her case mites. No amount of reasoning will relieve these patients from their convictions.

Drug therapy with a number of neuroleptics is helpful, but these medications have significant side-effects and many of these patients prefer to endure their disease, which after all may serve some purposes.

On Good Friday, Mrs. M. looked particularly glum as she sat in the waiting room. Maybe it was the Spring-time weather. As I looked at her, I mused, "Winter kept us warm." Corinne my secretary, had brought Mrs. M. a joyous pot of tulips to commemorate the holiday, but had not yet given it to her. These bright flowers on their proud green stems were practically smiling on their own. This gesture of beauty and simplicity touched Mrs. M. who a few minutes later, when she entered my consultation room, beamed with pleasure as she told me how much Corinne meant to her; how much her caring mattered.

I'd been preparing a talk on Spirituality and Medicine, and asked Mrs. M. "Are you religious?" She said no, she didn't go to church any more, but had a strong belief in God. I asked her if she prayed, and she said yes, daily. She prays for health and for her daughter and grandchildren. Was she disappointed that God had not cured her of her parasites? No. She is being punished for things she has done.

1). An abortion in her early 20's.
2). A brief impulsive marriage during WWII.
3). Her absence, due to illness, at the funeral of her estranged second husband.

Why, would God punish her so cruelly for those acts? Others do far worse things. Indeed, people in the Bible did worse, and were saved. Was it possible that it was not God who was punishing her, but that she was inflicting this plague of parasites on herself? She thought for a few seconds, then said, "You know, I've never thought about that. No, I don't think so."

I asked her if she'd speak to a clergyman or woman. No, that was

Continued on p. 62

Our pledge to you

As Straub physicians, we welcome your referrals... and pledge to:

- Report our evaluation to you promptly by phone, fax or mail (whatever you prefer).
- Never make secondary referrals without your approval.
- Always direct the patient back to you for continuing care.

To make your referrals easy, we have a Physician Referral Specialist, Kym Kaohi. To contact Kym and to get a binder on Straub specialists and services, call 522-4444.



KYM KAOHI, MA • PHYSICIAN REFERRAL SPECIALIST



For assistance, call Kym at 522-4444

Straub
Partners in health
straubhealth.com

Medical School Hotline

Compassion in Medicine

Excerpted from the White Coat Ceremony* Key Note Address, August 4, 2000

Damon H. Sakai, M.D.
Assistant Professor, Medicine
John A. Burns School of Medicine

**The White Coat Ceremony creates an important focus for students entering medical school. Each student receives his/her first white coat, also called, "cloak of compassion". The ceremony impresses upon them the primacy of the doctor-patient relationship. The message conveyed is that physicians should care as well as cure. The Ceremony was conceived by the Arnold P. Gold Foundation, a foundation dedicated to fostering humanism in medicine. (Adapted from the Arnold P. Gold Foundation.)*

Dean Cadman, honored guests, faculty, students of the Class of 2004, family and friends. I feel very fortunate to be with you this evening, on such a proud occasion, for these talented future physicians and colleagues. Tonight is a dream realized for both students and their families. This is the night we don our first cloaks of compassion and reflect on its importance to our professional and personal lives. So tonight, I will place before you some narratives that exemplify the importance of this virtue in our training and careers. Reflect on these stories as opportunities for compassion.

Before sharing them, I shall promise you as a class that tonight, I will be brief. Unfortunately, this promise does not hold for the lectures I will give this month, or for the exams I will help write for you later this year. But let's put these exams in perspective. You will hear from many physicians over the next four years that no patient has ever asked us what we scored on our MCAT. No patient has ever asked how we did on our Unit 1 MEQ or our clinical skills/clinical anatomy exam.

Instead, our patients will concern themselves with the kind of people we are. They will identify with our genuine care for them as people.

And I truly believe that when all is said and done, what our patients will ultimately remember about us is our compassion.

The television show ER has given millions an insight into medicine and medical training. My first story is from an emergency room physician who tells how a child who had drowned in a nearby lake was brought to his department dead. "At first," he says, "the death was no more personal to me than it would have been had I simply read about it in the newspaper. Having to tell his parents changed everything. Listening to his mother scream and sob was wrenching. But in between the tears came stories of the child's personality, interests, and dreams, and suddenly the sense of loss came over me as the child went from being a corpse to being a boy who had kissed his mother good-bye that afternoon promising her he would be careful."[1]

This is a story from our professional lives. This physician identifies with the pain felt by the family of the boy he tried to revive in the emergency room. Compassion means having this ability and the skills to respond with words and deeds to comfort those in need. As medical students your stories will involve the unborn, young children, and adults of all ages. And your responses will be influenced by role models around you. Wrote one third-year medical student:

"My supervising intern told me that Mrs. D had died. I had a hard time believing it. I walked into the room, where two nurses were stripping Mrs. D's body of a bloodstained gown, to see a dead person for the first time. The only other experience where I had palpably experienced death, was during the first year when I was exposed to my cadaver for anatomy class. But, this was quite different. Mrs. D's face was blue, her eyes were open, and she was not stiff. One of the nurses asked me to stay and then proceeded to change the sheets, put a new gown on Mrs. D, and close her eyelids. I wasn't embarrassed to cry, but it certainly helped me to know that my intern also felt the same way. There were tears in her eyes as well.

After the family left, she told me that someone had once impressed on her the importance of following up on a death with a sympathy note to the family. I was stunned. These were things that were not written anywhere yet were so important. I knew that my intern would make a great doctor and that she was the person I would have taking care of my parents. She was a conscientious and caring person whom I would trust with a life, and she would know how to appreciate and care for it well."[2]

In the past students were poorly advised to avoid "getting too close" to patients for fear that it would cloud clinical decision making. But despite these warning, we've learned that students inevitably identify with their patients. This empathic identification is a reflection of their strength of character and an important milestone in their professional development. In this instance, most students are like the Tinman in the Wizard of Oz. We recognize him to be the most compassionate of Frank Baum's characters, yet ironically, he wishes to find a heart.

Because we believe you enter medical school already blessed with humanism and altruism your task is similar to that of the Tinman, not to learn about compassion, but hold onto it, despite the adventures that lay ahead of you. So imagine your compassion is a treasure for which you are the sole guardian. In the coming years, this treasure will be threatened when your trials and tribulations seek to displace your altruism.

In her poem "Sins of Omission" Margaret Sangster shares this warning by writing:

"The loving touch of the hand,
The gentle winning tone
Which you had no time, nor thought for
With troubles enough of your own."

Instead of losing your caring, let your future training lead you to care more. That's what this physician does in this story about her grandmother during the holiday season.

"Life brought you many challenges many struggles and many hardships. The years left their marks as lines on your face and gray-hues colored your hair. The sun weathered your skin adding freckles from age. Your mind slipped into its own world where few could reach you. We lost you years before to the disease that steals the mind and leaves behind the body to slowly fade, with the passage of

time. A disease known as the "longest goodbye". The person we once knew, the one I called Grandmother, was lost in a haze of mixed up neurons and faulty wiring.

As a physician trained to save and prolong life with so many instances of having to do "everything", I often wondered, "Who are we to presume we are more powerful, more knowledgeable, more omnipotent than the forces of nature." To hear frail bones crack under the pressure of the CODE in a futile attempt to turn back the hands of time. I see this struggle to stop the inevitable death over and over again and it is not one that I would wish for my patients, my family or my loved ones.

My wish for you in this season of goodwill towards men and for every day since we "lost" you is for a peaceful death, a good death, a death of days gone by. For you to slip away without fanfare without sirens, without shouting, without pain, and without CODES. And find a rest without waking.

This year we both got our wish for Christmas. You left us with serenity and dignity, quietly and peacefully in your sleep, the way you had always asked to go."[3]

In the past 5 years, one of the biggest areas of curricular reform has been improving end-of-life care education. Contributing to the forces that brought issues like physician-assisted suicide and advance care planning to the forefront has been a perception that physicians are less compassionate than they once were.

Americans fear they will die in pain, on machines, in an institution. They fear being a burden on their families at the end of life, yet also fear dying alone. Health care providers frequently attempt to prolong life at all cost. They often succeed. Without compassion, alleviating these fears seems unattainable. Compassion can help our patients accept the end of their lives as a part of life itself. It can gently lift away futile hope for a cure and replace it with hope for a good, painless passing, surrounded by family, and going to heaven, or one's chosen afterlife.

As an intern fresh out of medical school I remember being called to evaluate a patient in the hospital who had fallen out of bed. A quick look at her chart told me she was a terminally ill patient with metastatic cancer.

As I reached her bedside she suddenly reached out and grabbed my arm. And before I could say anything she said, "Please kill me." I didn't know what to say or do. Still bothered by this the next morning, I shared the story with the other four interns at the hospital with me. As it turned out, each had been called by this very patient, with the same request.

Emily Dickinson said:

"If I can stop one heart from breaking,
I shall not live in vain;
If I can ease one life the aching,
Or cool one pain"

I sometimes wish I could go back in time and say or do something that would have made a bigger difference for this patient, now long gone. I imagine talking with her, not about why she fell out of bed, but the deeper issues that make me remember her to this day.

"Why do you want me to kill you?"
"Are you in pain?"
"Do you have someone to talk to?"
"Would you like me to stay for a while?"

Compassion is a powerful treatment yet it doesn't cost much at all. There are few adverse effects and rarely is there an overdose. It can be given to people of any age, race, or gender. It defines us as physicians.

Over the next four years these students will be spending a great deal of time at the medical school. It will be a new home for them. To the family and friends of the class of 2004, I hope you will leave this ceremony believing that this new medical school home will be a warm and nurturing one. A home with high expectations for academic achievement, but also for compassion and caring.

These are virtues William Shakespeare might call "twice blest"

"It blesses him that gives, and him that takes.
Tis mightiest in the mightiest; it becomes
The throned monarch better than his crown."

As it does the physician better than his diplomas.

Tonight you've received your first white coat. It will be the first of many. Before it's retired, it will be stained with coffee, stained with blood. Still, I encourage you to keep this first coat, your cloak of compassion, always.

Let it be a reminder of this evening, when you first recited the Hippocratic oath, and began to believe that the hero in these stories of compassion will be you.

References

1. Smith D. Physicians and personal grief. Last acts, A national coalition to improve care and caring at the end of life. Available from: URL:http://www.lastacts.org/.
2. Branch WT. The ethics of caring and medical education. Acad Med 2000;75:127-132.
3. Dyer KA. My wish for you, a grand-daughter's tribute to her grandmother. Last acts, A national coalition to improve care and caring at the end of life. Available from: URL:http://www.lastacts.org/.



Case of the Month

Giant Multiple Intraductal Papilloma of the Breast: A Case Report and Review of the Literature

J. Kavolius MD, C. Matsumoto MD, P. Greatorex MD, and G. Petermann MD
Departments of Surgery and Radiology
Tripler Army Medical Center

Abstract

A case is described of multiple intraductal papilloma of the breast in a 39 year old Micronesian female who presented to our institution with a 2 year history of spontaneous bloody nipple discharge with an associated giant cystic breast mass. This case report illustrates an unusual presentation of a rare benign breast lesion. The clinical, radiographic, and pathologic features of this disease process are discussed; the literature is reviewed; and management options are discussed.

Case Report

A 39 year old Micronesian female presented to medical attention with a 2 year history of spontaneous bloody nipple discharge from the right breast. This was associated with a progressively enlarging breast mass. The patient had undergone a previous central duct excision of the ipsilateral nipple for bloody discharge 10 years prior to this presentation. Pathology at that time was consistent with an intraductal papilloma.

Physical examination was remarkable for markedly asymmetric breasts. Within the right breast was a large, nontender, well-demarcated multilobular mass occupying primarily the retroareolar and medial quadrants (fig 1). Bloody nipple discharge was noted emanating from multiple ducts. The opposite breast was normal to palpation. There was no axillary, cervical, or supraclavicular adenopathy. Mammogram demonstrated multiple well-circumscribed soft tissue masses, the largest of which measured 7cm (fig 2). A needle aspiration was performed with 800cc of serosanguinous fluid obtained. This resulted in only partial resolution of the cystic mass, and within 36 hours most of the fluid had reaccumulated. Cytology of the aspirated fluid revealed monotonous benign-appearing ductal epithelial cells with several clusters of cells arranged in a papillary configuration consistent with a papillary lesion. No atypical cells were noted. Further imaging with ultrasound and MRI was performed. Ultrasound revealed multiple complex cystic masses with internal echoes and frond-like projections extending into the cyst cavity . MRI demonstrated multiple large complex cysts with fluid-fluid levels of low signal intensity on T1 weighted images. Within these complex cysts were frond-like projections peripherally that enhanced rapidly after gadolinium (fig 3).

Because of the size of the breast masses relative to the patient's breast size and the multiplicity of the lesions, simple mastectomy was recommended; the patient refused, however, opting instead for local excision. Pathologic examination revealed gross and microscopic changes consistent with a benign intraductal papilloma (fig 5,6). Multiple cysts were noted ranging in size from several millimeters to 11cm. No additional proliferative changes were noted in the adjacent breast tissue, nor was there any evidence of in-situ or invasive carcinoma. The patient received no additional therapy.

Figure 1.— Large, nontender, well-demarcated multilobular mass occupying primarily the retroareolar and medial quadrants.



Figure 2.— Mammogram demonstrating multiple well-circumscribed soft tissue masses, the largest of which measures 7cm.

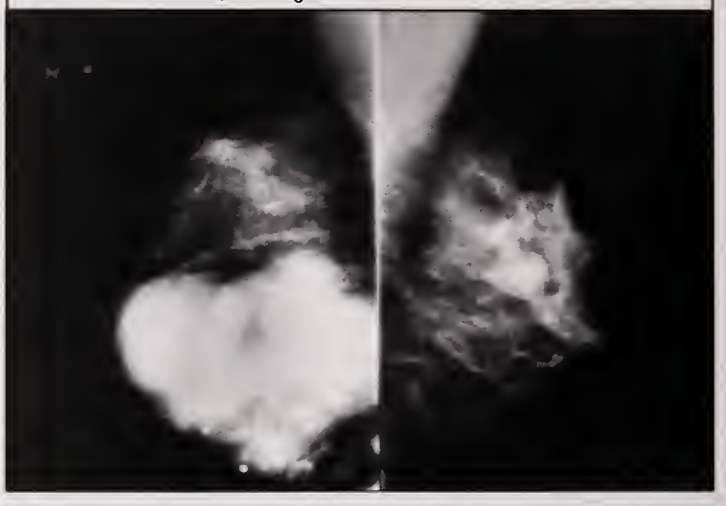


Figure 3.— MRI T1 weighted image (post gadolinium)- demonstrates multiple complex cysts with an enhancing internal frond-like projection consistent with an intraductal papilloma.

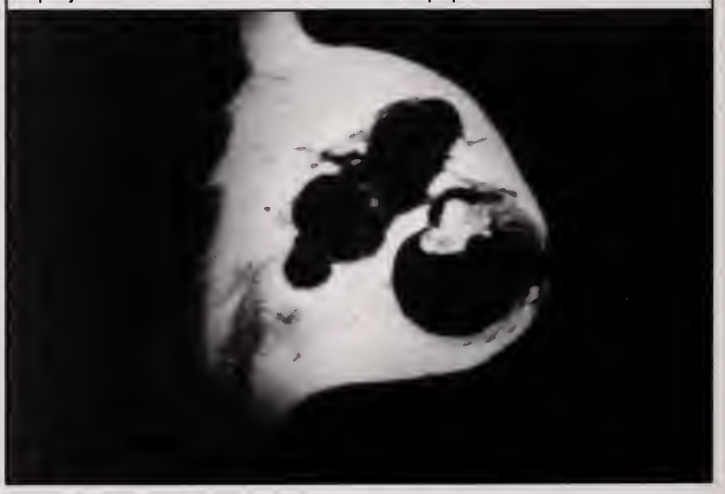
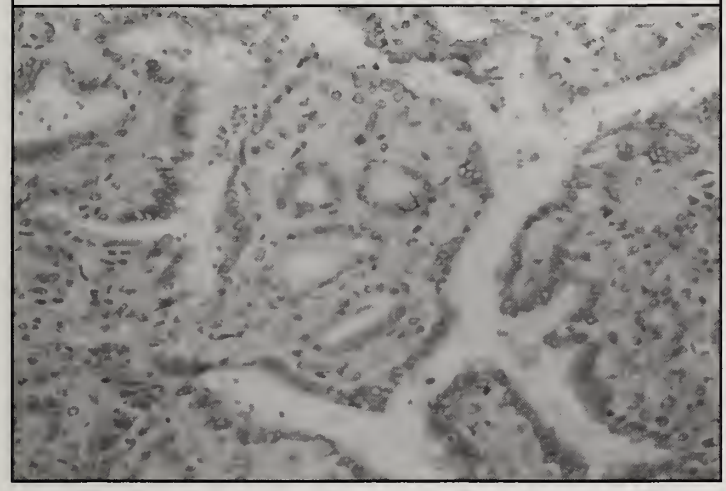


Figure 4.— Gross specimen showing large papilloma within the sectioned cyst.



Figure 5.— Histology showing a papillary, arborescent growth pattern supported by a branching fibrovascular stalk.



Discussion

Papillary lesions of the breast are rare and make up less than 10% of all benign breast pathology. Included are solitary and multiple papillomas. Although each of these is a distinct entity that exhibits different clinical behavior, they share the common pathologic feature of a papillary, arborescent growth pattern supported by a branching fibrovascular stalk upon which a benign epithelium resides.[1-4] As Tavassoli notes, the most important task of the pathologist in assessing a papillary lesion of the breast is to determine whether it is benign or malignant (papillary carcinoma). The single most important distinguishing feature is the presence or absence of a relatively uniform myoepithelial cell layer in the proliferating, papillary intraluminal component of the lesion. Furthermore, their location or site of origin—central versus peripheral—are associated with differences in clinical behavior.[3]

Solitary intraductal papilloma is the most common benign papillary lesion. It is typically seen in mid-life with a mean age between 45 and 50 years old. As the name implies, it is a solitary proliferation of benign ductal epithelium that is usually <5mm, is rarely palpable, rarely bilateral, and typically involves a single portion of a dilated subareolar lactiferous duct. For this reason up to 90% of these lesions are associated with spontaneous nipple discharge, which may be intermittent in nature.[5-8] The character of the discharge may be serous, serosanguinous, or frankly bloody.[9, 10] If palpable, the perceived mass noted on physical examination is often the dilated duct and surrounding reaction.[6] Because of their small size, intraductal papillomas may not be visible on mammography; however, when seen they may appear as a small mass or calcifications.[8] Histologically, they are characterized by the formation of epithelial fronds on a branching fibrovascular supporting structure or pedicle attached to the duct wall.[3] There may be associated areas of sclerosis, hyperplasia, and infarction with the involved duct typically being dilated or cystic. Isolated cases of large solitary papillary tumors have been reported. Haagensen reported on a 13 cm solitary intraductal papiloma that was initially misdiagnosed as a carcinoma, and treated with mastectomy.[7] Likewise, Roy in 1985 described a case in which a simple mastectomy was performed for a 15 cm breast mass thought to be a cystosarcoma phylloides. Pathologic evaluation revealed a 15x 13x11 cm multiloculated cyst containing approximately 440 cc of bloody fluid. Contained within the cavity was a 4 x 3.5 cm friable tumor mass close to the areola and two smaller 5mm masses. Histologically, these tumors were consistent with solitary intraductal papillomas.[11]

The risk of developing breast cancer within a solitary intraductal papilloma is arguably low or nonexistent. The papilloma is probably a marker of proliferative breast epithelium and is not premalignant itself. Any increased risk of cancer is, therefore, most likely related to the degree of associated atypical hyperplastic epithelium within the papilloma or in the surrounding tissue where the papilloma arises.[5, 12-17] As demonstrated by Page et al, if atypical hyperplasia is found within the papilloma, the risk of breast cancer development increases to perhaps 1.6 times that for papillomas without atypical hyperplasia. Papillomas associated with nonhyperplastic breast epithelium carry a very low risk of developing subsequent cancer.[18] As Carter notes in his review, as the epithelium around the papilloma becomes more hyperplastic, the risk increases.[5] Conservative surgical therapy is currently recommended for solitary intraductal papillomas.

Multiple intraductal papillomas, also referred to as peripheral papillomas, are less common then the solitary intraductal papilloma.[10, 19] These lesions tend to occur in younger patients, typically form small palpable masses, and have a tendency for bilaterally. In Haagensen's series[10], the average size was 2.8cm. Because they involve mammary ducts within the peripheral sectors of the breast, they are associated with spontaneous nipple discharge in less than 20% of cases. On mammogram, they appear as well circumscribed masses with or without associated calcifications.[8] Histologically, multiple intraductal papillomas share the same basic microscopic structure as the solitary intraductal papilloma but are much more extensive resulting from involvement of multiple foci of a single duct or involving multiple duct systems. They arise in the terminal duct lobular unit and may manifest prominent hyperplasia of the epithelium and myoepithelium. These lesions may also be associated with intraductal hyperplasia, with or without atypia, in adjacent ducts. [1, 3, 6, 10]

Unlike intraductal papilloma, multiple intraductal papillomas are associated with an increased risk of developing cancer. This risk

may be as high as 38%. The breast cancer may coexist with the papilloma or develop subsequent to its excision.[5,14,17,19,20,21] Although cancers may arise within the papilloma, the general consensus is that the cancers arise within the adjacent hyperplastic epithelium. Current treatment recommendations include breast conservation with complete local excision and lifelong follow-up. The local recurrence rates after resection may be as high as 24%.[22]

References

1. Farber JL, Rubin E. (ed.): Pathology, Philadelphia: JB Lippincott Co, 1988, pg 1191
2. Gadd, MA: Papillary Lesions. In Harris JR, Lippman ME, Morrow M, Hellman (eds): Diseases of the Breast, Philadelphia; Lippincott-Raven, 1996, pp 42-45.
3. Tavassoli FA: Pathology of the Breast. New York; Elsevier Science Publishing Co., Inc., 1992
4. Sclafani L: Benign Papillary Lesions of the Breast. In Harris JR, Hellmann S, Henderson IC, Kinne D (eds): Breast Diseases, Philadelphia; J.B. Lippincott Co., 1991.
5. Carter D: Intraductal papillary tumors of the breast: a study of 78 cases. Cancer 39: 1689-1692, 1977.
6. Rosen PP, Oberman HA: Tumors of the Mammary Gland. In Atlas of Tumor Pathology.Washington DC, Armed Forces Institute of Pathology, 1993 (#7).
7. Haagensen C, Stout A, Phillips J. The papillary neoplasms of the breast. Ann Surg 1951; 133: 18-36.
8. Cardenosa G, Eklund G. Benign papillary neoplasms of the breast: mammographic findings. Radiology 1991; 181: 751.
9. Moore S Pearce J, Ring E. Intraductal papilloma of the breast. Surg Gynecol Oncol 1961; 112: 153.
10. Kraus F, Neubecker R. The differential diagnosis of papillary tumors of the breast. Cancer 1962; 15:444
11. Roy I, Meakins JL, Tremblay G: Giant Intraductal Papilloma of the Breast: A case report. J Clin Onc 28: 281-283, 1985.
12. Hendrick J. Intraductal Papilloma of the Breast. Surg Gynecol Obstet; 105: 215-223, 1957.
13. Estes AC, Phillips C. Papilloma of Lacteal Duct. Surg Gynecol Obstet; 89: 345-348, 1949.
14. Murad TM, Contesso G, Mouriesse H: Papillary tumors of large lactiferous ducts. Cancer 48: 122-133, 1981.
15. Ciatto s, Andreoli C, Cirillo R, et al: The risk of breast cancer subsequent to histologic diagnosis of benign intraductal papilloma. Follow-up study of 339 cases. Tumori 77: 41, 1991.
16. Page DL, Dupont WD: Premalignant conditions and markers of elevated risk in the breast and their management. Surg Clin North Am 70: 834, 1990.
17. Ohuchi N, Abe R, Kasai M: Possible cancerous change of intraductal papillomas of the breast. A 3-D reconstruction study of 25 cases. Cancer 54: 605, 1984.
18. Page DL, Salhany KE, Jensen RA, et al: Subsequent Breast Carcinoma Risk after Biopsy with Atypiain a Breast Papilloma. Cancer 78: 2; 258-266, 1996.
19. Haagensen CD (ed): Diseases of the Breast (3rd ed.), Philadelphia: WB Saunders Co, Ltd., 1986.
20. Haagensen CD: Intraductal papilloma. In Haagensen CD (ed): Diseases of the Breast, Philadelphia: WB Saunders Co, Ltd., 1971, pp 250-291.
21. Kilgore AR, Fleming R, Ramos MM. The incidence of cancer with nipple discharge and the risk of cancer in the presence of papillary diseases of the breast. Surg Gynecol Obstet 1953; 96: 649.
22. Haagensen C, Bodian C, Haagensen D. Breast Carcinoma: risk and detection. Philadelphia, WB Saunders, 1981.
23. Page DL, Dupont WD: Risk factors for breast cancer in women with proliferative breast disease. N Engl J Med 312: 146; 1985.
24. Estabrook A: Are patients with solitary or multiple intraductal papillomas at a higher risk of developing breast cancer? Surg Onc Clin North Am 2 (1): 1993, pp 45-56.
25. Howard MA, Rosenblatt MS: Management of intraductal papilloma. Am J Surg 92: 142-150, 1961.
26. Jeffrey P, Ljung B. Benign and malignant papillary lesions of the breast. Am J Clin Pathol 1994; 38:23.
27. Bodian C, Perzin K, Lattes R, et al. Prognostic significance of benign proliferative breast disease. Cancer 1993; 71:3896.

"Letter to the Editor," continued from p. 56

impossible. I guess she's come into an equilibrium with the parasites. Perhaps they are a penance that she is willing to bear.

But in her drab, foreboding world there are now tulips, and the love they stand for will last far longer that their ephemeral blooms. I recognized now that these blooms are more important that all my insights and groping theories. The tulips came from the heart of a caring person as a gift to one in pain; and that is far more of an anodyne than by insight-oriented therapy or mind-numbing drugs. If there is to be a cure for Mrs. M. and so many more like her, it is more apt to come from another's heart, from a random act of kindness, than from some physician's head.

The question is, can this be taught? Or is it innate, a gift of genes and nurture. Sadly, those who enter medical school with this aptitude often lose it in the "educational" process.\

David J. Elpern MD
191 Water Street
Williamstown, MA 01267

Editor's Note:
David J. Elpern, MD majored in comparative Literature at Columbia College and earned his Medical Degree at New York University School of Medicine in 1970. He was in general practice for four years before completing his dermatology residency at Johns Hopkins. Many readers will remember David when he practiced dermatology on the island of Kauai and was the Director of the Kauai Skin Cancer Registry.

For more than 20 years, David has had a special interest in medical education. He has organized an annual national Continuing Medical Education course in Dermatology "Hot Spots in Dermatology" as well as symposium on the medical humanities for the past 10 years. The next "Hot Spots" is planned for August 2001 on the Big Island of Hawaii. He is also organizing a conference to be held in Cuba in January 2002. David can be contacted via fax at (413) 458-4224 and on the Web at kauai@bcn.net.

Until there's a cure, there's the American Diabetes Association.

Until there's a cure, there's the American Diabetes Association.

ARE YOU PAYING TOO MUCH IN TAXES?

Invest in the

Bishop Street Hawaii Municipal Bond Fund

... and keep more of your investment earnings!

★★★★

Rated 4 stars by Morningstar

(Overall rated 4 stars for the 3- and 5-year periods ending 12/31/00 out of 1,722 and 1,479 municipal bond funds, respectively)

- Substantially exempt from federal and Hawaii state income taxes*
- Active portfolio management
- High-quality investment portfolio

For more information and to obtain a prospectus containing important information regarding sales charges and expenses, see the First Investment Center Investment Specialist. Visit the First Investment Center desk at your nearest First Hawaiian Bank Branch or **call 487-0288 on Oahu or 1-800-787-2977**. Please read the prospectus carefully before investing.

BISHOP STREET FUNDS

*Certain shareholders may be subject to the Alternative Minimum Tax (AMT). Federal income tax rules will apply to any capital gains distributions.

Past Performance is no guarantee of future results. Mutual Fund investing involves risk, including loss of principal.

Morningstar proprietary ratings reflect historical risk-adjusted performance as of 12/31/00. The ratings are subject to change every month. Morningstar ratings are calculated from the fund's three-, five- and ten-year average annual returns in excess of the 90-day Treasury bill, and a risk factor that reflects fund performance below the 90-day Treasury-bill. The Bishop Street Hawaii Municipal Bond Fund received 4 stars for the three- and five-year periods. The top 10% of the funds in an investment class receive 5 stars, the next 22.5% receive 4 stars, the next 35% receive 3 stars, the next 22.5% receive 2 stars.

Bishop Street Capital Management, an investment subsidiary of First Hawaiian Bank, serves as investment advisor for the Bishop Street Funds. The Bishop Street Funds are distributed by SEI Investments Distribution Co., which is not affiliated with First Hawaiian Bank, Bank of the West or BancWest Corporation. Securities offered through BancWest Investment Services, a registered broker dealer, member NASD/SIPC. Investment Specialists are registered representatives of BancWest Investment Services.

© 2001 Bishop Street Funds

NOT FOIC INSURED, NO BANK GUARANTEE, MAY LOSE VALUE

DNR Orders in the OR

L. Tungpalan MD[+] and S.Y. Tan MD, JD[++]

Abstract

Patients with do-not-resuscitate (DNR) orders may elect to have palliative surgery. Should DNR orders be automatically suspended in the operating room (OR)? This article addresses the following issues:

(1) Ethics of DNR orders
(2) The American Society of Anesthesiology's Ethical Guidelines for the Anesthesia Care of Patients with Do-Not-Resuscitate Orders or Other Directives that Limit Treatment
(3) The Statement of the American College of Surgeons on Advance Directives by Patients
(4) Current hospital policies regarding perioperative DNR policies in Hawaii
(5) Recommendations to improve DNR policies in the OR.

Hypothetical Case Scenario

It is three o'clock in the morning when an old woman slowly stumbles into the emergency room. "I don't feel too good," she whispers to the triage nurse. The nurse recognizes the pale lady immediately – it is Mrs. Hoku Keawe, a 78 year-old woman with colon cancer metastatic to the liver and a frequent visitor to the emergency room for intractable pain. This visit would be different.

Mrs. Keawe hunches over, grabs her abdomen, and groans. The physician makes a prompt diagnosis of acute bowel obstruction. You, the surgeon on-call, deem emergent surgery appropriate. Mrs. Keawe previously consented to a DNR ("No-Code") status. However, she and her family agree to palliative surgery to alleviate the bowel obstruction.

In the operating room, you are aware she has an allergy to penicillin, but mistakenly order Zosyn (piperacillin/tozabactam). A few minutes after the administration of the antibiotic, she develops angioedema, bronchospasm, and hypotension followed by cardiac arrest. Since this complication is iatrogenic, you feel justified in overriding her DNR status and begin resuscitation, complete with epinephrine, volume infusion and multiple electroshocks.

Mrs. Keawe is now in the intensive care unit in critical condition. Later that morning, you check on her progress. On physical exam, she is comatose without any pupillary reflexes but hemodynamically stable. For two weeks, Mrs. Keawe remains in this vegetative state. You explain the bleak prognosis to her family, and they tearfully agree to withdraw mechanical ventilation.

Correspondence to:
S.Y. Tan MD, JD
2226 Liliha St., #403
Honolulu HI 96817
Telephone: (808) 526-9784
siang@hawaii.edu

Background: The Science & Ethics of the DNR Order

In 1960, "closed-chest cardiac massage" changed medicine. Previously, only open thoracotomy and direct cardiac massage achieved successful cardiac resuscitation following a cardiac arrest[1] (also called code 500, code-blue, or simply "code"). Combined with artificial respiration, closed-chest cardiac massage initially boasted a 70% survival rate. After forty years of utilization, CPR fully revived some patients after an unforeseen cardiopulmonary arrest. However, for people with progressive chronic illnesses, CPR may simply prolong death. The actual effectiveness of CPR depends on the patient's profile and the environment where CPR is employed. Only 14% of patients in the general wards leave the hospital alive following CPR.[2]

The results of CPR can be devastating and include severe irreversible neurologic injuries. After CPR, a comatose patient without pupillary reflexes has only a 6% likelihood of regaining consciousness and virtually no chance of functioning independently.[3] Regaining consciousness is also highly unlikely for patients without corneal reflexes after the first day following CPR.

The initial CPR standards acknowledged that "CPR is not indicated in certain situations, such as in cases of terminal irreversible illness where death is not unexpected....Resuscitation in these circumstances may represent a positive violation of an individual's right to die with dignity."[4]

A patient's decision to forgo CPR efforts is an example of autonomy. Autonomy means that "patients have the right to choose actions that are consistent with their values, goals, and life plan, even if their choices disagree with the wishes of family members or the recommendations of their physicians."[5] Therefore, after a patient discusses the prognosis with the physician, the patient may consent to a do-not-resuscitate (DNR) status. A DNR order (also referred to as "No-Code") states that in the event of a cardiac or respiratory arrest, no CPR efforts would be undertaken.

Terminally ill patients may elect a DNR status and choose a palliative course of action. However, surgery can be part of the palliative care plan. In 1991, approximately 15% of patients with DNR orders had a surgical procedure.[6] Most interventions are intended to improve comfort and/or nursing care. However, when a terminally ill patient with a DNR order undergoes surgery, how should physicians deal with the patient's code status, especially if an iatrogenic cardiac arrest occurs?

Special Conditions in the OR

CPR's effectiveness increases in the OR.[7] The OR is a controlled, artificial environment where drugs and procedures significantly alter cardiopulmonary function and increase the risk of a cardiopulmonary arrest.[8] But the OR is also heavily monitored, and problems are diagnosed quickly. Therefore, better resuscitation results. Many

studies show a 50% survival from CPR for perioperative cardiac arrests, versus an 8-14% survival from in-hospital CPR.[9,10,11,13]

When anesthesia causes a cardiac arrest, resuscitation is usually easily reversible with no adverse sequel. A Swedish study retrospectively assessed 250,000 surgical cases between 1967-1984. It reported that 65% of the patients who had a cardiac arrest perioperatively were successfully resuscitated. When anesthesia caused the arrest, the recovery rate jumped to 92%. The causes of anesthetically induced cardiac arrest included esophageal intubation, disconnection from mechanical ventilation, or prolonged exposure to high concentrations of anesthetics.[14]

Iatrogenic Cardiac Arrest

The majority of physicians feel it is acceptable to allow a patient to die from a terminal disease but believe it is inappropriate for a patient to die as a direct result of an anesthetic or surgical accident.[15] The potential conflict of adhering to a DNR order or reversing an iatrogenic arrest not uncommonly arises during surgery. Many anesthesiologists and surgeons are uncomfortable handling these DNR conflicts.

In 1999, Casarett et al assessed whether physicians were more likely to override a DNR order if a hypothetical cardiac arrest was caused iatrogenically. Their survey revealed that 69% of physicians were very likely to override a DNR order if the cardiac arrest was due to physician error. However, only 8% said they would override a DNR order if the cardiac arrest were due to the underlying disease.[16]

The authors suggested three explanations why many physicians would decide to override a pre-existing DNR order: (1) concern for malpractice litigation, (2) feelings of guilt or responsibility, and (3) the belief that patients do not consider the possibility of an iatrogenic cardiac arrest when they consent to a DNR order. Physicians may also believe a "properly negotiated DNR order does not apply to all foreseeable circumstances."[17]

Some ethicists suggest that "an iatrogenic cause for an illness does not make it permissible to override a patient's prior refusal of treatment."[18] Neither the axiom to "do no harm" nor the likelihood of successful resuscitation would justify overriding a patient's wishes, since "errors should not alter ethical obligations to respect a patient's refusal of treatment."[19]

National Guidelines of American Society of Anesthesiology and American College of Surgeons

Prior to the 1990s, DNR orders were routinely suspended when a patient entered the operating room. This practice has since been re-evaluated by the American Society of Anesthesiology and the American College of Surgeons because of concerns that such a policy is a violation of patient autonomy.

American Society of Anesthesiology (ASA)

In 1993, the ASA adopted and approved the *Ethical Guidelines for the Anesthesia Care of Patients with Do Not Resuscitate Orders or Other Directives that Limit Treatment.* The ASA stated that "an essential element of preoperative preparation and perioperative care for patients with Do-Not-resuscitate (DNR) orders...is communication among involved parties."[20]

The *Guidelines* established that "policies automatically suspending DNR orders or other directives that limit treatment prior to procedures involving anesthetic care may not sufficiently address a patient's rights or self-determination in a responsible and ethical manner. Such policies, if they exist, should be reviewed and revised, as necessary, to reflect the content of these guidelines."[21]

The ASA urged that "prior to procedures requiring anesthetic care, any existing directives to limit the use of resuscitation procedures should, when possible, be reviewed with the patient or designated surrogate."[22] During the review, a patient could temporarily modify the DNR status. In 1993, the *Guidelines* initially recommended that physicians offer patients two choices for the management of their existing DNR order during the perioperative period:

(1) "Full attempt at resuscitation."
   - The patient or designated surrogate "may request the full suspension of existing directives during the anesthetic and immediate postoperative period, thereby consenting to the use of any resuscitation procedures that may be appropriate to treat clinical events that occur during such time"

(2) "Limited attempt at resuscitation defined with regard to specific procedures" (also known as "partial code")
   - The patient or designated surrogate may "elect to continue to refuse certain specific resuscitation procedures (i.e. chest compressions, defibrillation or tracheal intubation)."
   - The anesthesiologist would explain which resuscitation procedures are necessary for surgery and which are not.

The response to the 1993 ASA *Guidelines* was a "lukewarm acceptance, frequent misunderstanding, and inconsistent application."[23] In 1996, Bastron et al modified the ASA *Guidelines* to two options where (1) patients or their surrogate could suspend their DNR status during the perioperative period or (2) patients or their surrogate could delegate all decisions regarding resuscitation solely to the anesthesiologist.[24] Bastron's alternatives were criticized for not allowing patients any choice in defining their treatment since either option gave the anesthesiologist the power to decide the patient's fate.

Two years later, in 1998, the American Society of Anesthesiologists' House of Delegates amended the *Guidelines* to include a third option in the perioperative management of a patient's DNR status. A patient or surrogate could have a "limited attempt at resuscitation defined with regard to the patient's goals and values....This option may allow the anesthesiologist and surgical team to use clinical judgment in determining which resuscitation procedures are appropriate in the context of the situation and the patient's stated goals and values." The amended *Guidelines* provide the following example: "Some patients may want full resuscitation procedures to be used to manage adverse clinical events that are believed to be quickly and easily reversible, but to refrain from treatment for conditions that are likely to result in permanent sequel, such as neurologic impairment or unwanted dependence upon life-sustaining technology."

The advantages of this third option are that the anesthesiologist is given more "procedural flexibility and the context of the arrest plays a larger role in determining the clinical response."[25] Nonetheless, there are also disadvantages to this goal-oriented approach. An anesthesiologist's interaction with the patient is usually brief, and it may be difficult to fully comprehend a patient's goals, values, and

objectives in a short amount of time. Another concern about the goal-oriented approach is whether "knowledge of the patient's goals is actually an accurate predictor of what the patient would want." [26]

A further concern of partial codes is their decreased effectiveness. The "Advanced Cardiac Life Support (ACLS) has been shown to be effective only when all resuscitation components are provided. These include ventilation, chest compression, drug therapy, electrical cardioversion, etc. Omitting certain procedures during CPR makes no sense and will simply reduce the chance for success."[27] With a partial code, "death is virtually a foregone conclusion."[28]

The ASA *Guidelines* recommends that "the medical record should also indicate if or when the original, pre-existent directive to limit the use of resuscitation procedures will be reinstated. This should generally occur when the patient leaves the post-anesthesia care unit or when the patient has recovered from the acute effects of anesthesia and surgery."[29]

American College of Surgeons (ACS)

The ACS and the Association of Operating Room Nurses also adopted similar policies on re-evaluating the DNR status in the operating room. In 1994, the *Statement of the American College of Surgeons on Advance Directives by Patients* acknowledged that patients with DNR orders may become candidates for surgical procedures and that "when such patients undergo surgical procedures and the accompanying sedation or anesthesia, they are subjected to new and potentially correctable risks of cardiopulmonary arrest."[30] Like the ASA, the ACS agrees that "many of the therapeutic actions employed in resuscitation (for example, intubation, mechanical ventilation, and administration of vasoactive drugs) are also an integral part of anesthetic management, and it is appropriate that the patient be so informed."[31,32]

The ACS states "policies that lead either to the automatic enforcement of all DNR orders and requests or to disregarding or automatic cancellation of such orders and requests during the operation and recovery period may not sufficiently address a patient's right to self-determination. An institutional policy of automatic cancellation of the DNR status in cases where a surgical procedure is to be carried out removes the patient from appropriate participation in decision making. Automatic enforcement without discussion and clarification may lead to inappropriate perioperative and anesthetic management."[33]

The ACS considers "the best approach is a policy of required reconsideration of the previous advance directives."[34] Like the ASA, the ACS asserts that "the patient and physicians who will be responsible for the patient's care should discuss the new risks and the approach to potential life-threatening problems during the perioperative period."[35,36] However, unlike the ASA, the ACS does not list any specific alternatives in the perioperative management of a patient's DNR status.

Applying National Guidelines to Our Hypothetical Case

Several controversial issues arise when we apply the national guidelines to our hypothetical case involving Mrs. Keawe, the 78 year-old woman with metastatic colon cancer. First, Mrs. Keawe had a pre-existing DNR order. Prior to undergoing surgery, her DNR status was not reevaluated by her physicians. In effect, Mrs. Keawe's self-determination was not addressed and may have been violated when the physician provided CPR after her cardiac arrest was caused by an iatrogenic event.

According to the ASA and ACS guidelines, the physician should have reviewed with Mrs. Keawe her DNR status, discussed with her the potential risks of surgery & anesthesia, and explained the effectiveness of CPR should the need arise. The physician would then obtain new specific perioperative orders regarding CPR. Mrs. Keawe may or may not have wished to alter her DNR status, even if the arrest was iatrogenic. Such clear instruction would have enabled the surgeon and anesthesiologist to proceed with full understanding and respect of the patient's wishes.

Hawaii's DNR Policies in the OR

We were able to review the most recent official DNR/No CPR policies of nine hospitals* in Hawaii and examined the following five issues:

(1) Are DNR orders automatically suspended in the operating room?
(2) Who obtains the new code status? Surgeon? Anesthesiologist? Both?
(3) What choices do we offer the patient?
(4) How long does the new code status last?
(5) Is there a resolution process when a patient's code status conflicts with the physician's views?

Are DNR orders automatically suspended?

Hawaii's hospital policies fall into three main categories: (1) automatic suspension of DNR status during perioperative period, (2) encouraged discussion of code status with the patient, and (3) mandatory discussion of code status with the patient.

Only two hospitals state that "all previous orders are terminated when patients go to surgery." Almost half of the hospitals require a mandatory discussion of code status and use the following language: "the surgeon and anesthesiologist must discuss with the patient or the patient's proxy whether to continue the No CPR order perioperatively." The remaining three hospitals encourage but do not mandate discussion of the patient's code status.

Who obtains the new code status?

Most of the policies recommend that both the anesthesiologist and surgeon should discuss the DNR status with a patient or designated surrogate. Two of the policies stated that it was the "surgeon's obligation" to reevaluate the code status with the patient. One hospital asserted that "all physicians caring for a patient (e.g., the attending physician, surgeon, and anesthesiologist) should confer about whether they think a DNR order should be continued. One of them should then discuss the DNR order with the patient and/or the patient's surrogate preoperatively and decide whether to continue the orders."

What choices do we offer the patient?

According to the ASA, a patient should be offered three alternatives (full suspension of DNR status, limited resuscitation defined with regard to specific procedures, and limited resuscitation defined with regard to the patient's goals & values). None of Hawaii's hospitals specifically provide for all three alternatives.

A couple of hospitals offer two of the three alternatives: (1) continuance of DNR status with limited attempt at resuscitation defined with regard to specific procedures and (2) full suspension of DNR order perioperatively.

About half of the hospitals offer a single alternative: full suspension of the DNR order perioperatively. One hospital does not specifically offer any alternatives, stating instead that "the physician who will be responsible for the patient's care during the procedure should discuss the new risks and the approach to potential life-threatening problems during the perioperative period. The results of the discussion should be documented in the record."

How long does the new code status last?

Only two hospital policies are specific and clear about the duration of a new code status with language as follows: "if the patient or patient's proxy desires to have the No CPR order suspended perioperatively, the No CPR order shall remain in effect until the anesthesiologist begins to administer anesthesia and shall be reinstated by written order of the patient's attending physician upon the patient's discharge from the recovery room or at such other time as the attending physician determines appropriate." Most of Hawaii's hospitals do not outline specific time limits.

Is there a resolution process for conflicts?

The majority, but not all of the hospitals provide a specific resolution process for ethical conflicts; e.g. "no healthcare professional may be forced to participate in an operation for a patient who desires the No CPR order to continue perioperatively. If a treating professional declines to honor a No CPR order in the perioperative setting, he or she must...find a replacement so that the patient will not have to choose between temporarily suspending the No CPR order during surgery or foregoing surgery."

Summary Points

Based on our review of this subject, we offer the following guidelines:

1. Overriding a patient's DNR wish may violate his/her right to self-determination. DNR orders should therefore not be automatically suspended in the OR.
2. Both the surgeon & anesthesiologist must discuss with the patient the additional OR risks, including iatrogenically induced cardiopulmonary arrest. The patient should also be made aware of the markedly improved chance of successful perioperative resuscitation.
3. The surgeon & anesthesiologist should adhere to the new DNR or full code order per patient's wishes. If both surgeon & anesthesiologist are unable to meet with the patient at the same time, these physicians should confer with each other preoperatively to ensure a common understanding of the patient's DNR status.
4. ACLS has been shown to be effective only when all resuscitation components are employed. Therefore, a patient should be offered one alternative to their DNR status – full attempt at resuscitation.
5. Post-operative reinstatement of original DNR status should be clearly determined and documented. Normally this is upon discharge from the recovery room to the general hospital ward.
6. In the event of a conflict, the surgical team is obligated to transfer the patient to another team willing to accept the patient's code status.

Acknowledgments

*We wish to thank the following hospitals for kindly sharing their DNR policies with us: Castle Medical Center, Kaiser Permanente, Kapiolani Women's & Children's Medical Center, Kuakini Health System, Queen's Medical Center, St. Francis Health Care System of Hawaii, Straub Clinic & Hospital, Tripler Army Medical Center, and Wahiawa General Hospital.

We thank Eloise Y. Tungpalan for her review of this manuscript.

Authors

+ L. Tungpalan is a graduate of the University of Hawaii, John A. Burns School of Medicine and is in residency training in anesthesiology at the Mayo Clinic in Rochester, Minnesota. This work was done during a four-week senior ethics elective.

++ S.Y. Tan, MD, JD is a Professor of Medicine and Adjunct Professor of Law at the University of Hawaii. He chairs the Ethics Committee at St. Francis Medical Center, Honolulu.

References

1. Kouwenhoven WB, Jude JR., Knickerbocker GG. Closed-Chest Cardiac Massage. *JAMA.* 1960; 173:1064-1067
2. Fine PG, Jackson SH. DNR in OR: More Rights than Wrongs. *The American Journal of Anesthesiology.* 1995; 12:46-51.
3. Levy DE, Caronna JJ, Singer BH, et al. Predicting outcome from hypoxic-ischemic coma. *Journal of American Association.* 1985; 253:1420-1426.
4. Standards for cardiopulmonary resuscitation and emergency cardiac care: V. Medicolegal considerations and recommendations. *JAMA.* 1985; 227(suppl):864-866
5. Lo, Bernard. *Resolving Ethical Dilemmas: A Guide for Clinicians.* Williams & Wilkins. 1995: 158-167.
6. Troug RD. Do-Not-Resuscitate Orders During Anesthesia and Surgery. *Anesthesiology.* 1991; 74:606-608.
7. Lo, Bernard. *Resolving Ethical Dilemmas: A Guide for Clinicians.* Williams & Wilkins. 1995: 158-167.
8. Bastron HD. Ethical Concerns in Anesthetic Care for Patients with DNR Orders. *Anesthesiology.* 1996:
9. Fine PG, Jackson SH. DNR in OR: More Rights than Wrongs. *The American Journal of Anesthesiology.* 1995; 12:46-51.
10. Byrick RJ, et al. A Monitored Cardiovascular Collapse during Cemented Total Knee Replacement. *Anesthesiology.* 1986; 65:213-216.
11. Mackey DC, et al. Bradycardia and Asystole during Spinal Anesthesia: A Report of Three Cases without Morbidity. *Anesthesiology.* 1989; 70:866-868.
12. Long WB, Rosenblum S, Grady IP. Successful Resuscitation of Bupivacaine-Induced Cardiac Arrest Using Cardiopulmonary Bypass. *Anesthesiology Analog.* 1989; 69:403-40196.
13. Frerichs RL, Campbell J, Bassell GM. Psychogenic Cardiac Arrest During Extensive Sympathetic Blockade. *Anesthesiology.* 1988; 68:943-944.
14. Olsson GL, Hallen B. Cardiac Arrest during Anesthesia. A Computer-aided Study in 250,543 Anesthetics, *Acta Anaesthesiologica Scandinavia.* 1988; 32:653-664.
15. Troug RD. Do not resuscitate orders during anesthesia and surgery. *Anesthesiology.* 1991; 74:606-608
16. Casarett DJ, et al. Would physicians override a DNR order when a cardiac arrest is iatrogenic? *JGIM,* 1999: 14;35-38.
17. Casarett DJ, et al. Would physicians override a DNR order when a cardiac arrest is iatrogenic? *JGIM,* 1999: 14;35-38.
18. Casarett DJ, Ross, LF. Overriding a patient's refusal of treatment after an iatrogenic complication. *New England Journal of Medicine.* 1997; 336:1908-9.
19. Casarett DJ, et al. Would physicians override a DNR order when a cardiac arrest is iatrogenic? *JGIM,* 1999; 14:35-38.
20. American Society of Anesthesiology. *Ethical Guidelines for the Anesthesia Care of Patients with Do-Not-Resuscitate Orders or Other Directives that Limit Treatment;* amended 1998.
21. American Society of Anesthesiology. *Ethical Guidelines for the Anesthesia Care of Patients with Do-Not-Resuscitate Orders or Other Directives that Limit Treatment;* amended 1998.
22. American Society of Anesthesiology. *Ethical Guidelines for the Anesthesia Care of Patients with Do-Not-Resuscitate Orders or Other Directives that Limit Treatment;* amended 1998.
23. Jackson SH, Van Norman GA. Goals- and values-directed approach to informed consent in the "DNR" patient presenting for surgery. *Anesthesiology.* 1999; 90:1-6.
24. Bastron RD. Ethical concerns in anesthetic care for patients with do-not-resuscitate orders. *Anesthesiology.* 1996; 85:1190-1193.
25. Jackson SH, Van Norman GA. Goals- and values-directed approach to informed consent in the "DNR" patient presenting for surgery. *Anesthesiology.* 1999; 90:1-6.
26. Troug RD, Waisel DB, Burns JP. DNR in the OR: a goal-directed approach. *Anesthesiology.* 1999; 90:289-295.
27. Stevens D. Cardiopulmonary Resuscitation. *End-of-Life Care.* Edited by S.Y. Tan. St. Francis Health System. 2000; 39-43.
28. Gazelle, G. The Slow Code – should anyone rush to its defense? *New England Journal of Medicine.* 1998; 338:467-9.
29. American Society of Anesthesiologists. *Ethical Guidelines for the Anesthesia Care of Patients with Do-Not-Resuscitate Orders or Other Directives that Limit Treatment;* amended 1998.
30. Statement of the American College of Surgeons on Advance Directives of Patients. "Do not resuscitate" in the operating room. *ACLS Bulletin,* 1994.
31. Statement of the American College of Surgeons on Advance Directives of Patients. "Do not resuscitate" in the operating room. *ACLS Bulletin,* 1994.

References continue on p. 73

WE COLLECT PAST DUE ACCOUNTS

Only 25%* fee for Health Care Firms!

Why give up more!

Wood & Tait

HI Collection & Detective Agency
Staff on Kauai, Oahu, Maui, & Hawaii
http://www.woodtait.com

739-0433

jwood@woodtait.com

*Applies to accounts assigned during this promotion; no restrictions as to dollar size or age of accounts. Fee will increase to 50% if litigation or forwarding required; you will receive a contract.

Medical Office For Lease

Aiea Medical Building
99-128 Aiea Heights Dr.
Suite 502

- Reception Area
- Private Office
- Two Exam Rooms
- Lab Area
- X-Ray Room
- Built In Cabinets
- Bathroom

AREA: 771 sf. **TERMS:** 3 to 5 years
GROSS RENT: $1,900 mo + G.E.T.
PARKING: Visitors free; one tenant stall included, additional stall available for $65 per month.
OCCUPANCY: Available Now
FOR SALE: Unit also available for purchase (LH)

Gary C. Cook (B)
808-526-0896

COLDWELL BANKER COMMERCIAL
PACIFIC PROPERIES

gccook@cbcpacific.com



Schering/Key Pharmaceutical

Claritin-D 12 Hour
(5 mg loratadine/120 mg pseudoephedrine sulfate, USP)
Extended Release Tablets

Claritin-D 24 Hour
(10 mg loratadine/240 mg pseudoephedrine sulfate, USP)
Extended Release Tablets

Claritin RediTabs
10 mg (loratadine rapidly-disintegrating tablets)

Claritin Syrup
(loratadine) 10 mg per 10 mL

Once-a-day nasonex (mometasone furoate monohydrate) Nasal Spray, 50 mcg

Claritin 10 mg (loratadine)

Tequin gatifloxacin

Schering **Velvet Agena-Chee**
Senior Sales Representative
Voice Mail (800) 782-2347
Box 3858

Schering **Donn keoki Arizumi**
Pharmaceutical Representative
Voice Mail (800) 544-5420
Box 8058

KEY **Shawn Brady**
Sales Representative
Telephone (808) 387-1409
Voice Mail (800) 554-5420
Box 1342
FAX (808) 373-1772
E-Mail shawn.brady@spcorp.com

Schering **Mark Buquoi**
Sales Representative
Telephone (808) 384-3862
Voice Mail (800) 544-5420
Box 9795
FAX (808) 841-6105

Schering **Dennis M. Hamamura**
Senior Pharmaceutical Rep.
Telephone (808) 671-0225
Voice Mail (800) 544-5420
Box 8774
FAX (808) 671-0817

KEY **Carol K. Honda**
Sales Representative
Voice Mail (800) 554-5420
Box 8322
FAX (808) 593-1776

Schering **Rachelle Hyde**
Sales Representative
District Trainer
Voice Mail (800) 782-2347
Box 3861

KEY **Caroline Perry**
Sales Representative
Voice Mail (800) 554-5420
Box 1274
E-Mail Caroline.perry@spcorp.com

Schering **Brian Souza**
District Account Representative
Telephone (808) 394-9475
Voice Mail (800) 554-5420
Box 6811
FAX (808) 394-9475
E-Mail brian.souza@spcorp.com

THE HAWAII DIET:

AD LIBITUM HIGH CARBOHYDRATE, LOW FAT MULTI-CULTURAL DIET FOR THE REDUCTION OF CHRONIC DISEASE RISK FACTORS: OBESITY, HYPERTENSION, HYPERCHOLESTEROLEMIA, AND HYPERGLYCEMIA

Terry T. Shintani MD, JD, MPH, Sheila Beckham RD, MPH, Amy C. Brown PhD, RD, and Helen Kanawaliwali O'Connor

Abstract

Objective: *The purpose of this study was to determine the health effects of a high carbohydrate, low fat multi-cultural traditional diet, The Hawaii Diet, fed ad libitum to an adult population.*

Methods: *Twenty-two adults recruited from various cultural backgrounds in Hawaii were fed, without calorie or portion size restriction, the Hawaii Diet for 21 days. The Hawaii Diet, based on familiar traditional foods from different cultures, is high in complex carbohydrate (77% of calories), low in fat (12% of calories), and moderate in protein (11% of calories). Participants were encouraged to eat to satiety.*

Results: *There was a significant weight loss on The Hawaii Diet averaging 10.8 lbs (23.8 kg) ($P < .0001$). Blood pressure was decreased from an average of 136.0/82.7 mm Hg to 125.5/78.9 mm Hg yielding a significant decrease of 10.4 mm Hg for systolic ($P < .01$). Beginning diastolic levels were normal so decreases in these values were not significant. Average lipid values also decreased with total serum cholesterol being significantly reduced from 205.3 to 156.9 mg/dl ($P < .0001$); LDL from 125.9 to 94.9 mg/dl ($P < .001$); and HDL from 38.3 to 31.3 mg/dl ($P < .0005$). Triglycerides (238.7 to 152.2 mg/dl) and the Chol:HDL ratio (5.8 to 5.2) improved at marginally significant levels ($P < .08$). There was also a significant reduction in blood glucose levels from 112.2 to 91.5 mg/dL ($P < .01$).*

Conclusion*: The Hawaii Diet consisting of high carbohydrate, low fat ethnic meals appears to have a beneficial influence on weight loss and in decreasing systolic blood pressure, total cholesterol, LDL, and blood glucose values. Marginal improvement occurred for triglyceride levels. There was also a significant drop in HDL levels, however, the Chol:HDL was ratio did not increase. Further studies of longer duration with a control group should be conducted to test the effectiveness of The Hawaii Diet in maintaining these health benefits over a longer period of time.*

Correspondence to:
Sheila Beckham, MPH, RD
Preventive Health Department
Waianae Coast Comprehensive Health Center
86-260 Farrington Hwy
Waianae, HI 96792
(ph) 808-696-1511 (fax) 808-696-1533
sbeckham@wcchc.com

Introduction

People in Hawaii live longer than those residing in any other state in the United States.[1,2] A major factor may be the multi-ethnic traditional diets that were brought to Hawaii by the wide range of ethnic groups that have become the basis of the multi-cultural population of Hawaii. The popular use of foods from traditional diets of multi-ethnic, cultural origin occurs to a greater degree in Hawaii than in other regions of the United States.

According to MacGregor, diet is by far the most important environmental factor determining longevity.[3] Traditional diets have historically been associated with low rates of chronic disease from the Pacific to the Mediterranean. Although there is a common use of traditional Asian, Polynesian, and European foods in Hawaii, the modern American diet has rapidly become the dietary mainstay. Along with this change is the gradual increase in all the risk factors of related to the health problems of Americans such as obesity, coronary heart disease, certain cancers, diabetes, and strokes.

In order to evaluate the healthfulness of a modern mix of traditional ethnic foods in Hawaii, individuals of various ethnic backgrounds were placed on a diet composed of the multi-ethnic foods of Hawaii. This diet, called The Hawaii Diet, is a part of a greater program known as the Hawaii Health Initiative which is a whole-person, whole-community intervention strategy to help improve the health of the people of Hawaii. This multi-cultural traditional diet (77% carbohydrates; 12 % fat; and 11% protein) consists of modern versions of traditional dishes from many cultures.

While there are a number of studies that have demonstrated the healthfulness of traditional diets of the Mediterranean and Asia,[4,5] there is some controversy as to whether high carbohydrate – low fat diets are beneficial. The concern stems from certain studies indicating that high carbohydrate diets may increase triglycerides and lower HDL levels.[6] Recent findings also suggest that high insulin levels may be a risk factor for coronary heart disease, and that these may increase due to high carbohydrate diets.[7] This concern is especially relevant in Hawaii where the traditional diets of the ancestors of most people in Hawaii are typically high in carbohydrate.

The purpose of this nutrition-based intervention study was to determine if ad-libitum feeding of high carbohydrate, low fat multi-ethnic meals known as The Hawaii Diet, reduced certain chronic disease risk factors. Measurable outcomes were determined by evaluating weight loss/gain, blood pressure, lipid profile (total cholesterol, LDL, HDL, triglycerides, and cholesterol:HDL ratio), and blood glucose values.

Methods

Study Population: Twenty two participants were selected from various sectors of the community to include the Governor, cabinet members, one legislator, members of one of the Hawaiian homesteads, and various political, business, and community leaders. All resided on the island of Oahu, with the exception of one subject from the Big Island. A screening interview was conducted of individuals from this pool of potential participants. They were selected from this population on the following basis:

1) Commitment to the program and its rules so as to ensure the success of the program.
2) Stability of health problems so as not to pose a danger to the individuals by a complete change in diet.
3) Potential for facilitating change in the community.
4) Ethnic diversity.

Ten men and 13 women whose ages averaged 49.9 years (range = 33 to 89 years of age) were selected for the study. The average weight of the participants was 237 lb (107.7 kg) with a range of 123.5 to 471 lbs (107.8 to 102.9 kg). Of these participants; 13 were of native Hawaiian ancestry, 7 were of Asian ancestry, 2 were or European ancestry, and 1 was of African ancestry. One subject dropped out due to a conflict in scheduling making 22 the final number of participants. Patients were screened to eliminate unstable health conditions such as congestive heart failure, renal insufficiency, unstable angina, and poorly controlled hypertension. Chronic medical conditions of the subjects included: 6 hypertensives on medication; 1 borderline hypertensive not on medication; 4 diabetics on medications with one of these taking insulin; 2 with glucose intolerance; 2 on estrogen replacement therapy; and 1 with thyroid insufficiency taking synthroid. None of the subjects were taking cholesterol lowering medication, but one was taking a fiber supplement, metamucil.

The Diet and Study Design: The Hawaii Diet was designed to demonstrate the effectiveness of a multi-ethnic diet in controlling chronic disease risk factors in a multi-ethnic population. The selection of food on the program consisted of foods from the various ethnic groups in Hawaii such as Japanese, Filipino, Portugese, Italian, Hawaiian, Chinese, Thai, and others. In keeping with the patterns of healthy diets of the Pacific (including Asia), the fat content was kept low (below 12 %) and the animal protein content was limited to approximately 8 ounces per week. The menu included staple foods such as brown rice, pasta, oatmeal, whole wheat bread, taro (a starch root), poi (mashed taro), sweet potato, and yams; assorted vegetables such as salad greens, squash, eggplant, tomato, broccoli, Chinese greens, and seaweed; fruit such as apples, oranges, pears, and papayas, and protein sources such as legumes, tofu, fish, and skinless chicken.

The study period was 21 days. Patients were informed of the protocol, the risks and the benefits of the program, and a consent form was signed. This informed consent form was approved by the Institutional Review Board of University of Hawaii. The participants were instructed to adhere strictly to the dietary regimen and were not allowed to eat any food or drink any beverages other than what was prescribed. All meals were prepared at a common meal site in Honolulu that was conveniently accessed by the participants.

Unlimited quantities of foods were made available except for fish and chicken. To approximate the multi-ethnic diets of the Pacific, estimated to contain approximately 12% fat, the menus were identical to a research project previously conducted in which the food intake was measured carefully and the macronutrients calculated precisely.[6]

The participants were required to come to the meal site twice a day for breakfast and dinner. In the mornings, blood pressures were taken and any individuals who had diabetes had their blood sugar tested. Lunch and snacks were distributed at this time. In the evening everyone met for a health education session over dinner.

The Hawaii Diet Program physician was present each day to evaluate and monitor medical conditions including blood pressures, blood sugars, medications and any other medical problems. Fasting blood panels including HDL and brief physical exams were done at the beginning and at the end of the program. Blood samples were analyzed at the largest licensed commercial laboratory in Hawaii. Weights were taken each day at the meal site on the same balance scale. All official blood pressures were taken by a trained physician or registered nurse. The statistical significance of the results of the program were analyzed using a paired, two-tailed "t" test with a 95% confidence interval for comparing the difference between the means.

Results

Weight loss: The average weight loss on The Hawaii Diet Program was 10.8 lbs (23.8 kg) (range: 2.3 kg to 15kg) or 6.4% of total weight within the three week period (Table 1) ($P < .0001$). BMI decreased from 35.6 to 34.09 for a total decrease of ($P < .0001$).

Blood pressure: Systolic, but not diastolic blood pressure fell significantly. The average systolic blood pressure decreased from 136.0/82.7 mm Hg to 125.5/78.9 mm Hg yielding a significant decrease of 10.4 mm Hg for systolic blood pressure ($P < .01$).

Serum Lipids: Average lipid values also decreased with total serum cholesterol being significantly reduced from 205.3 to 156.9 mg/dl ($P < .0001$); LDL from 125.9 to 94.9 mg/dl ($P < .001$) (n=19 because three of the participants had triglyceride levels that were too high to use for LDL calculation); and HDL from 38.3 to 31.3 mg/dl ($P < .0005$). Triglycerides (238.7 to 152.2 mg/dl) and the Chol:HDL ratio (5.8 to 5.2) were also reduced, but at levels that were marginally significant ($P < .08$).

Serum Glucose: There was also a significant reduction in blood glucose levels from 112.2 to 91.5 mg/dL ($P < .01$). The significance of the effect of the diet on serum glucose is difficult to assess because four of the subjects were diabetics on medications and two additional subjects were glucose intolerant. All who were on medication had their dosages reduced. Of those who were not on medication, all experienced a reduction in their fasting blood glucose measurements.

Discussion

In general, ecologic studies on the relationship between traditional diets and health indicate that there is an association between modernization of diet and the rising rates of obesity and other cardiovascular risk factors.[9,10] Obesity is often associated with the cardiovas-

Table 1.— Average change in health risk factors for a multi-ethnic population (n=22[a]) after 21 days on The Hawaii Diet.

Health Risk Factor		Before	After	Change	p*
Weight	lbs	237.2	226.3	-10.8	< .0001
	(kg)	107.8	102.9	-4.9	
BMI	(kg/m2)	35.6	34.0	-1.6	< .0001
Blood Pressure					
	Systolic	136.0	125.5	-10.4	< .01
	Diastolic	82.7	78.9	-3.8	< .07
Cholesterol	(mg/dl)	205.3	156.9	-48.5	<.0001
	(mmol/l)	5.3	4.1	-1.25	
HDL	(mg/dl)	38.3	31.3	-7.0	< .001
	(mmol/l)	1.00	0.8	-1.3	
LDL [a]	(mg/dl)	125.9	94.9	-31	< .001
	(mmol/l)	3.3	2.5	-0.8	
Chol/HDL ratio		5.8	5.2	-0.6	< .08
Triglycerides					
	(mg/dl)	238.7	152.2	-86.5	< .08
	(mmol/l)	2.7	1.7	-1.0	
Glucose	(mg/dl)	112.2	91.5	-20.6	< .01
	(mmol/l)	6.2	5.1	-1.1	

[a] n=19; 3 participants had triglyceride levels too high for LDL calculation.

cular risk factors of hypertension, high total blood cholesterol, high LDL, low HDL, and higher fasting insulin levels.[11] Other major conditions associated with obesity are some cancers, osteoarthritis, and gall bladder disease.[12,13] Obesity is a particularly problem for Hawaiians and Samoans,[14-17] however, unexplained differences in diet and physical activity, suggests that genetic factors play an important role in the high prevalence of obesity in Native Hawaiians.[18] Nevertheless, multifactorial risk factor reduction is the most substantial benefit in decreasing cardiovascular morbidity and mortality.[19]

Weight Loss: Studies have been conducted that show the value of a low fat diet in producing weight loss.[20] Specifically, weight loss has been reported on ad libitum feeding of individuals with a low energy density (LED) diet.[21] Our previous study utilizing the ad libitum feeding of very low fat (less than 10%), high carbohydrate (78%) pre-Western contact traditional diet yielded results that are consistent with these studies.[5] These studies suggest that a low fat, high carbohydrate, low energy density diet will produce steady and safe weight loss sustained over a long period of time. Other research states that neither a low (35%) or high (45%) carbohydrate diet at hypocaloric levels of 1200 Kcal/day had a greater advantage when measuring weight loss.[22] On the other hand, high energy density high fat foods have been suggested to facilitate the overconsumption of fat.[23]

The multi-cultural Hawaii Diet in this study is both low in fat content (less than 12%) and low in energy density (0.80 cal/gm). The average weight loss observed in this study (3.6 lbs/1.6 kg per week) was somewhat greater than that found in other studies using LED diets (Weinsier 0.68 kg/wk)[24] and ad libitum low fat diets to reduce weight (Lissner 0.45 kg/wk)[25] or other health risks (Buzzard, 0.23 kg/wk).[26]

These observations may be explained by the relatively high initial weight and BMI of the participants. The weight loss may also be explained by the lower fat content of this diet (12%) compared to that of other programs (15-23%). This hypothesis is based on studies that suggest that percent body fat retention is related to percent fat in the diet,[27,28] and that according to Pagliassotti et al., genetically obese-prone rats do not become obese when fed low-fat diets.[29] Carmichael and associates also reported that a lower fat intake serves as a predictor of initial and sustained weight loss in obese subjects consuming an otherwise ad libitum diet.[30] Another factor contributing to the greater weight loss in this program may be the high carbohydrate content in this diet that some studies suggest is directly proportional to the amount of weight loss. This hypothesis is based on the thermogenic effect of carbohydrate[31] and on evidence that shows that only a small percentage of carbohydrate is actually converted to body fat.[32,33]

These results and those of other recent studies, suggest that varying the mix of nutrients, in particular the amounts of fat and carbohydrate, may be an effective way of dealing with obesity without requiring calorie counting. This is supported by Astrup et al. who reported that after a major weight loss, an ad libitum low-fat diet program appears to be superior to caloric counting in maintaining weight loss two years later.[34] It appears that ingesting LED diets contributes to self-regulation of caloric intakes that decrease naturally as reported in previous studies with the traditional Hawaii diet which is naturally low in energy density.[5] Supporting the importance of energy intake is Ernst et al. who reported that, "A focus on fat intake alone without emphasis on energy balance is inadequate for achieving and maintaining recommended weight."[35]

Recently there has been some debate as to whether carbohydrates cause a rise in insulin and therefore helps to reduce obesity. This study suggests that a traditional high carbohydrate diet based on whole traditional foods that are low in energy density helps to control blood sugar, insulin, and obesity.

Hypertension: The significant decrease in systolic blood pressure in this study may have been related to the observed weight loss and/or decreased dietary sodium. Data involving 361 participants suggested that weight loss in the range of 4% to 8% of body weight was associated with a decrease in blood pressure in the range of 3 mm Hg systolic and diastolic.[36] The decrease in systolic, but not diastolic blood pressures observed in this study may have been influenced by the blood pressure values prior to The Hawaii Diet. Five subjects had high systolic blood pressure values compared to only one subject with high diastolic blood pressure before the study, and all 6 cases of hypertension normalized after being on the Hawaii diet for 3 weeks.

Serum Lipids: The decrease in serum cholesterol could be attributed to the low fat, low cholesterol content of the multi-ethnic foods

in the Hawaii Diet .[37,38] Induced weight loss may also play a part in lowering cholesterol although even massive weight loss does not necessarily induce a decrease in cholesterol.[39] There was a moderate decrease in LDL, and a slight significant decrease in HDL. Although the decrease in HDL is not desirable, the decrease in total cholesterol yielded a net decrease in cardiovascular risk through the slight decrease in Chol/HDL ratio. The reduction in triglycerides is consistent with high carbohydrate diet studies[32,33,40,41] and inconsistent with others that indicate that high a carbohydrate diet causes a rise in triglycerides.[42,43] The triglyceride levels and Chol/HDL ratio marginally reduced on this high carbohydrate diet (contrary to other high carbohydrate studies) were possibly due to the use of more whole carbohydrate foods such as whole grains and legumes instead of refined carbohydrate sources such as sugar and white bread.

The moderate reduction in serum lipids with this diet occurred over a relatively short period. This suggests that a longer period on this very low fat diet could result in even lower lipid levels and a greater decrease in cardiovascular risk than currently demonstrated. A recent diet study that yielded reduced cholesterol levels and radiographic evidence of reversal of atherosclerosis used a diet that was similarly very low in fat (10%) and suggests that The Hawaii Diet would have similar results.[44]

Blood Glucose: The decrease in fasting blood glucose was consistent with other programs using high complex carbohydrate, high fiber diets in the management of diabetes.[45,46] The higher fiber content of The Hawaii Diet, especially soluble fiber, may contribute to what Chandalia et al. observed as improving glycemic control, decreasing hyperinsulinemia, and lowering plasma lipid concentrations in patients with Type II diabetes.[47] The individual taking psyllium supplements saw a reduction of blood sugar from 219 mg/dl to 120 mg/dl indicating that diet had a great impact over and above his baseline fiber supplement use.

As stated above, interpretation of this data is difficult due to four diabetic subjects in the study on medication, along with two subjects diagnosed with glucose intolerance. Because all 6 participants who had high starting fasting serum glucose levels had significantly lower blood sugar levels at the end of three weeks on the diet, with an average reduction of 55 mg/dl, it appears that the overall reduction in blood sugar would be even greater if this study were conducted with participants who all had elevated beginning fasting blood sugar levels. In addition, because there is a close correlation between blood sugar levels and insulin levels,[48] it may be inferred that insulin levels were also reduced by this diet, further decreasing cardiovascular risk.

Conclusion

The high carbohydrate, low fat, low energy density, multi-ethnic Hawaii Diet administered *ad libitum* was demonstrated to induce a significant weight loss and a reduction in systolic hypertension, total cholesterol, LDL, and serum glucose. Triglycerides and Chol:HDL ratio were marginally reduced.

Because these improvements in health risk factors were obtained without calorie restriction or portion-size limitations (with the exception of animal protein), this has important implications in long-term adherence to such a diet. Further research is needed to assess the long term effectiveness of such a program. In addition, the paradoxical impact of this high carbohydrate, low fat diet on triglycerides and glucose suggests that further study of this approach is warranted with an emphasis on the source of the carbohydrates and the overall energy density of the diet.

Acknowledgements

The authors would like to acknowledge the participants of the Hawaii Health Foundation and the Waianae Coast Comprehensive Health Center who conducted this study. We would also like to acknowledge the generous contributions of the Queen Emma Foundation, the Hawaii Medical Service Association, Aloha Care, and Aloha Airlines who made this project possible. In addition, we appreciate the assistance of Ke Ola Mamo, the Native Hawaiian health system for the island of O'ahu for providing some of the staffing of the program and Alouette's Catering for preparing the food. Finally, we want to acknowledge the support and participation of Honorable Benjamin Cayetano and his staff, the State of Hawaii, and the community of Papakolea for their cooperation in putting on this program.

References

1. Kranczer S. changes in longevity by state. *Stat Bull Metrop Insur Co* 1998; 79(3):29-36.
2. Braun KL, Yang H, Onaka AT, Horiuchi BY. Life and death in Hawaii: ethnic variations in life expectancy and mortality, 1980 and 1990. *Hawaii Med J* 1996;55(12):278-283, 302.
3. MacGregor GA. Nutrition and blood pressure. *Nutr Metab Cardiovasc Dis* 1999:9(4 Suppl):6-16.
4. Shintani TT, Hughes CK. Traditional diets of the Pacific and coronary heart disease. *J Cardiovasc Risk* 1994;1(1):16-20.
5. Shintani TT, Hughes CK, Beckham S, O'Connor HK. Obesity and cardiovascular risk intervention through ad libitum feeding of traditional Hawaiian diet. *Am J Clin Nutr* 1991;53(16):47S-51S.
6. Roche HM Dietary carbohydrates and triacylglycerol metabolism. *Proc Nutr Soc* 1999;58(1):201-207.
7. Laakso M. Insulin resistance and coronary heart disease. *Curr Opin Lipidol* 1996;7(4):217-226.
8. Shintani TT, Beckman SK, Bradley SH, et al. The Hawaii Diet Study (unpublished manuscript in progress).
9. Whittemore AS, Wu Williams AH, Lee M, et al. Diet, physical activity, and colorectal cancer among Chinese in North America and China. *JNCI* 1990; 82;11:915-926.
10. Young TK, Sevenhuysen G. Obesity in northern Canadian Indians: patterns, determinants, and consequences. *Am J Clin Nutr* 1989;49:786-793.
11. Harris TB, Savage PJ, Tell GS, et al. Carrying the burden of cardiovascular risk in old age: associations of weight and weight change with prevalent cardiovascular disease, risk factors and health status in the Cardiovascular Health Study. *Am J Clin Nutr* 1997;66(4):837-844.
12. de Leiva A. What are the benefits of moderate weight loss? *Exp Clin Endocrinl Diabetes* 1998;106 Suppl 2:10-13.
13. Goodman MT, Hankin JH, Wilkens LR, et al. diet body size, physical activity, and the risk of endometrial cancer. *Cancer Res* 1997;57(22):5077-5085.
14. Hughes CK, Tsark JA, Mokuau NK. Diet-related cancer in Native Hawaiians. *Cancer* 1996;78(7 Suppl):1558-1563.
15. Mau MK, Grandinetti A, Arakaki RF, et al. The insulin resistance syndrome in native Hawaiians. Native Hawaiian Health Research (NHHR) Project. *Diabetes Care* 1997;20(9):1376-1380.
16. Novotny R, Davis J, Ross P, Wasnich R. Adiposity and blood pressure in a multiethnic population of women in Hawaii. *Ethn Health* 1998:3(3):167-173.
17. Pawson IG, Janes G. Biocultural risks in longevity: Samoans in California. *Soc Sci Med* 1982;16(2):183-190.
18. Grandinetti A, Chang HK, Chen R, et al. Prevalence of overweight and central adiposity is associated with percentage of indigenous ancestry among native Hawaiians. *Int J Obes Relat Metab Disord* 1999;23(7):733-737.
19. Zafari Am, Wenger NK. Secondary prevention of coronary heart disease. *Arch Phys med Rehabil* 1998:79(8):1006-1017.
20. Hill JO, Melanson EL, Wyatt HT. Dietary fat intake and regulation of energy balance: implications for obesity. *J Nutr* 2000;130(2S Suppl):284S-288S.
21. Duncan KH, Bacon JA, Weinsier RL. The effects of high and low energy density diets on satiety, energy intake, and eating time of obese and nonobese subjects. *Am J Clin Nutr* 1983; 37:763-767.
22. Golay A, Eigenheer C, Morel Y, et al. Weight-loss with low or high carbohydrate diet? *Int J Obes Relat metab Disord* 1996;20(12)1067-1072.
23. Rolls BJ. The role of energy density in the overconsumption of fat. *J Nutr* 2000;130(2S Suppl):268S-271S.
24. Weinsier RL, Bacon JA, Birch R. Time calorie displacement diet for weight control: A prospective evaluation of its adequacy for maintaining normal nutritional status. *Int J Obes* 1983;7:538-548.
25. Lissner LL, Strupp DA, Kawlwarf HJ, et al. Dietary fat intake and the regulation of energy intake in human subjects. *Am J Clin Nutr* 1987;46:886-892.
26. Buzzard IM, Asp EH, Chlebowski RT, et al. Diet intervention methods to reduce fat intake: Nutrient and food group composition of self selected low fat diets. *J Am Diet Assoc* 1990;90(1):42-53.
27. Salmon DW, Flatt JP. Effect of dietary fat content on the incidence of obesity among ad libitum fed mice. *Intl J Obesity* 1985; 9:443-449.
28. Romieu I, Willett WC, Stampfer MJ, et al. Energy intake and other determinants of relative weight. *Am J Clin Nutr* 1988;47:406-412.
29. Pagliassoti MJ, Gayles EC, Hill JO. Fat and energy balances. *Ann N Y Acad* Sci 1997;827:431-448.
30. Carmichael HE, Swinburn BA, Wilson MR. Lower fat intake as a predictor of initial and sustained weight loss in obese subjects consuming an otherwise ad libitum diet. *J Am Diet Assoc* 1998;98(1):35-39.
31. Hurni M, Burnand B, et al. Metabolic effects of a mixed and a high carbohydrate low-fat diet in man, measured over 24 h in a respiration chamber. *Br J Nutr* 1982;47:33- 41.
32. Acheson KJ, Schutz Y, Bessard T, et al. Glycogen storage capacity and de novo lipogenesis during massive carbohydrate overfeeding in man. *Am J Clin Nutr* 1988;48:240-247.

33. Acheson KJ, Schutz Y, Bessard T, et al. Nutritional influences on lipogenesis and thermogenesis after a carbohydrate meal. *Am J Physiol* 1984:246(1 Pt 1):E62-70.
34. Astrup A, Toubro S, Raben A, Skov AR. The role of low-fat diets and fat substitutes in body weight management: what have we learned from clinical studies? *J Am Diet Assoc* 1997;97(7 Suppl):S82-87.
35. Ernst ND, Obarzanek E, Clark MB, El al. Cardiovascular health risks related to overweight. *J Am Diet Assoc* 1997;97(7 Supppl):S47-51.
36. Murlow CD, Chiquette E, Angel L, Et al. Dieting to reduce body weight for controlling hypertension in adults. *Cochrane Database Syst Rev* 2000;2:CD000484.
37. Chima CS, Miller-Kovach K, et al. Lipid management clinic: Dietary intervention for patients with hypercholesterolemia. *J Am Diet Assoc* 1990;90:272-274.
38. Connor WE, Connor SL. The dietary treatment of hyperlipidemia: rationale, technique, and efficacy. *Med Clin North Am* 1982;66:485-518.
39. Kempner W, Newborg BD, Peschel RL, & Skyler JS. Treatment of massive obesity with rice/reduction diet program. *Arch Int Med* 1975;35:1575-1584.
40. Snehalatha C, Sivasankari S, Satyavani K, et al. Postprandial hypertriglyceridaemia in treated type 2 diabetic subjects – the role of dietary components. *Diabetes Res Clin Pract* 2000;48(1):57-60.
41. Turley ML, Skeaff CM, Mann JI, Cox B. The effect of a low-fat, high-carbohydrate diet on serum high density lipoprotein cholesterol and triglyceride. *Eur J Clin Nutr* 1998:52(10):728-732.
42. Blades B, Garg A. Mechanisms of increase in plasma triacylglycerol concentrations as a result of high carbohydrate intakes in patients with non-insulin-dependent diabetes mellitus. *Am J Clin Nutr* 1995;62(5):996-1002.
43. Garg A, Bantle JP, Henry RR, Coulston AM. Effects of varying carbohydrate content of diet in patients with non-insulin-dependent diabetes mellitus. *JAMA* 1994;1(18):1421-1428.
44. Ornish D, Brown SE, Scherwitz LW, et al. Can lifestyle changes reverse coronary heart disease? *Lancet* 1990;336:129-133.
45. Anderson JW. Hypolipidemic effects of high carbohydrate high fiber diets. *Metabolism* 1980; 29:551-558.
46. Andersen E, P Hellstrom, et al. Effects of a rice rich versus a potato rich diet on glucose, lipoprotein, and cholesterol metabolism in noninsulin dependent diabetics. *Am J Clin Nutr* 1984; 39:598-606.
47. Chandalia M, Garg A, Lutjohann D, et al. Beneficial effects of high dietary fiber intake in patients with type 2 diabetes mellitus. *N Engl J Med* 2000;342(19):1392-1398.
48. Morris KL, Zemel MB. Glycemic index, cardiovascular disease, and obesity. Nutr Rev 1999;57(9 Pt 1):273-276.

"DNR Orders..." references continued from p. 67

32. American Society of Anesthesiology. *Ethical Guidelines for the Anesthesia Care of Patients with Do-Not-Resuscitate Orders or Other Directives that Limit Treatment;* amended 1998.
33. Statement of the American College of Surgeons on Advance Directives of Patients. "Do not resuscitate" in the operating room. *ACLS Bulletin,* 1994.
34. Statement of the American College of Surgeons on Advance Directives of Patients. "Do not resuscitate" in the operating room. *ACLS Bulletin,* 1994.
35. Statement of the American College of Surgeons on Advance Directives of Patients. "Do not resuscitate" in the operating room. *ACLS Bulletin,* 1994.
36. American Society of Anesthesiology. *Ethical Guidelines for the Anesthesia Care of Patients with Do-Not-Resuscitate Orders or Other Directives that Limit Treatment;* amended 1998.

FIVE WAYS TO DIE ON THE GOLF COURSE:

1. Hit by a golf ball.
2. Run over by a golf cart.
3. Whacked by a golf club.
4. Struck by lightning.
5. Forgot your hat.

Surprisingly, one million new cases of skin cancer are detected every year. One person an hour in the U.S. dies from melanoma, the deadliest form of skin cancer. If you spend a lot of time in the sun, you should protect yourself. One out of five Americans develops skin cancer during their lifetime. Don't be one of them. Stay out of the midday sun. Cover up. Wear a hat. Seek shade. And use sunscreen. For more information on how to protect yourself from skin cancer, call 1-888-462-DERM or visit www.aad.org.

AMERICAN ACADEMY OF DERMATOLOGY

Cancer Research Center Hotline

Major New Grant in Cancer Epidemiology

Laurence N. Kolonel MD, PhD
Deputy Center Director
Director, Cancer Etiology Program

Faculty in the Epidemiology Section of the Cancer Etiology Program have recently received a major grant award ($14 million over five years) from the National Cancer Institute to establish a biorepository of blood and urine specimens from more than 40,000 persons on Oahu. The award begins the fourth 5-year cycle of a continuing Program Project Grant in the Epidemiology Section and reflects the high confidence of the NCI in the continuing productivity and peer-reviewed contributions of its research faculty. Program Project (P01) Grants are large grants that support several projects and investigators, sharing a common theme.

The proposed research builds on another ongoing activity of the epidemiologists at the Cancer Research Center. This is a large multiethnic cohort study of Diet and Cancer, which was begun by some of the epidemiology faculty in 1993 with the collaboration of colleagues at the University of Southern California. More than 215,000 men and women in Hawaii and California provided baseline information on their diets, physical activity, medical and reproductive histories, as well as sociodemographic variables. The study includes representative samples from five ethnic groups: Japanese-Americans, Native Hawaiians, Caucasians, African-Americans, and Latinos. The participants are being followed prospectively for cancer incidence, as well as incidence and mortality from other causes, in order to identify risk factors for these diseases. For example, the role of dietary fat components in influencing the development of prostate cancer, the role of folate in the risk of colorectal cancer, and the role of legumes, including soy products, in possibly reducing the risk of breast and prostate cancers will be studied. An additional aim is to identify reasons for the vast ethnic variations in cancer incidence that exist in Hawaii and elsewhere in the U.S.

The Program Project extends the research potential and value of this enormous cohort, by the addition of a major biological component. Fasting blood and 12-hour urine specimens will be collected from participants at their homes or through an arrangement with Diagnostic Laboratory Services. The blood specimens will be aliquoted into multiple cryotubes containing serum, plasma, erythrocytes, and buffy coat and stored in a state-of-the-art biorepository, using -150 ^{0} C liquid nitrogen freezers. Urine will be stored in separate aliquots at -80 ^{0} C in mechanical freezers. These valuable samples will permit the researchers to test several hypotheses related to biological markers and selected cancer sites. For example, blood or urine levels of vitamin D metabolites, homocysteine, insulin-like growth factors, and isothiocyanates will be investigated for their relationships to colorectal cancer; phytoestrogens, tocopherols, and estrogens will be studied in relation to breast cancer; vitamin C, total phenol, isothiocyanates, and selenium will be studied with respect to lung cancer; and fatty acids, insulin-like growth factors, and androgens will be examined in relation to prostate cancer.

In addition to the study of biochemical markers, the Program Project and other grants related to the Multiethnic Cohort will be exploring the relationship of genetic markers of susceptibility to cancer. Considerable work has already been done on newly identified polymorphisms in genes involved in estrogen and androgen metabolism in relation to breast and prostate cancers, in genes involved in the metabolism of foods and their constituents in relation to colorectal cancer, and in genes involved in the metabolism of tobacco carcinogens and lung cancer. It is hypothesized that differences in the distributions of the allelic forms of these polymorphic genes may explain in part the wide ethnic differences in cancer risk that are seen in Hawaii. The interactions between such inherited gene variants and exposure to dietary and other risk factors, so-called "gene-environment interactions," are thought to play a major role in determining the risk of cancer in individuals and in explaining variations at the population level. Research on the Multiethnic Cohort, especially the proposed studies under the newly-funded Program Project Grant, should make a substantial contribution to the understanding of the role of diet and other risk factors in the etiology of cancer.

Researchers on the Program Project Grant include Laurence Kolonel MD, PhD, Abraham Nomura MD, DrPH, Loic Le Marchand MD, PhD, Marc Goodman PhD, Lynne Wilkens Dr PH, Daniel Stram PhD, Terrilea Burnett PhD, Adrian Franke PhD, and Chuanfa Guo, PhD. Additional information on the Cancer Research Center's activities can be found by visiting the website at www.crch.org.

Nurses the  *of Healthcare*

Registered Nurses, Licensed Practical Nurses, Medical Assistants

Qualified and experienced in a wide variety of job settings.

All applicants carefully screened and matched to your specific job.

We are fully responsible for payroll, taxes, benefits and insurance.

Kahu Malama Nurses, Inc.

Short & Long Term Staff Relief and Permanent Placement

Serving Hawaii since 1982

Available 24 hours

(808) 951-0111 Fax: 949-3834

Inter-island: 1-800-773-9021

e-mail: nurses@kahumalama.com

News and Notes Henry N. Yokoyama MD

Potpourri I

Two lawyers who were running against each other for a judgeship had just finished lunch... "I'm going to win this election," said the first lawyer to his opponent, "because I put in the personal touch. Like here at this restaurant, for example, I left the waiter a 5 dollar tip so he'll vote for me."

"Oh, really?" said the second lawyer. "Well I left him a nickel and told him I'm your campaign manager."

A customer brought in his new car into our dealership to have the automatic transmission repaired. He said he could not understand how the problem occurred since he took such good care of his car. I reminded him that the car was still under warranty; so he shouldn't worry about it.

"By the way," I asked before he walked out, "Why are there two brackets on your front bumper?"

"Oh, those?" he replied, "They're for my snow plow."

Literally Psychotic:

In psychiatry, the "On Call Witching Hour" usually begins after midnite. One night, as a resident, I was called at 3 am to see a patient in the E.R.

Bleary eyed, I dragged myself out of bed and walked two blocks to the hospital.

I tried to interview the patient, who was less than forthcoming about his recent symptoms. After 15 minutes, I'd still failed to elicit any time course to the exacerbation of his condition. I tried again, "Just how long have the voices been getting worse."

"Oh, for some time."

"Would that be days, weeks or months?" I tried.

Finally in desperation, I demanded, "Just give me a ball park figure!"

With a twinkle in his eye, he replied, "OK... Nine innings."

Potpourri II

Too Compliant:

The typically abrasive surgeon was leading his cadre of medical students around the ward.

The final case of the morning rounds was supposedly a gentleman with abnormal findings on digital rectal exam...

The surgeon left abruptly with the promise he'd return shortly to hear their findings...

The gentleman was surprised, but he acquiesced to the students' requests to assume the appropriate position and expose the necessary anatomy...

Each of the students (some half dozen) performed a very complete, thorough, and meticulous digital rectal exam.

Alas, no one could find any pathology. Each tried harder that his predecessor... With each exam, the patient squirmed more vigorously while each student tried harder than his predecessor to go higher, deeper, farther...

Having exhausted their resources and sensing impending doom, the students fetched the professor who completed the insult by exploring the anatomical nether world yet again...

A look of consternation and perplexity crossed the surgeon's face. Reluctant to admit defeat, the frustrated surgeon turned to the patient, "Are you here with a tumor of your prostate gland?"

The now alarmed "patient" gestured vigorously towards the adjacent bathroom door... "In there, in there! I'm just visiting."

(Stitches)

Taylor's Twist:

Rules are funny things. As one of our professors used to remark... "The amount of luck required to pass an exam bears an inverse relationship to the amount of knowledge possessed by the candidate."

One of our classmates had developed a monomania for the thyroid. He ate, slept, drank, dreamt the wretched gland...

Strong men wilted when they heard him begin: "The molecular structure of thyroxine is fascinating."

As luck would have it, his major surgical case was one of goitre, his OB case thyrotoxicosis of pregnancy and his ophthalmology case thyroid exopthalmus. It looked as if he was going to take a first class honors degree.

The Sister introduced him to his major medical case. The patient obviously had hypothyroidism...

The examiner entered and announced, "Well now Mr. O'Conner, tell us about your patient. Off he went: "The general history and physical are unremarkable, but the major disease is fascinating..."

Just before the allotted time was up, one examiner stopped the verbiage and said, "Just for completeness, tell us the patient's general condition."

"Perfectly normal, perfectly normal...Not relevant."

"I thought you said that," answered the examiner, turning down the bed covers to reveal a distinct absence from below the knee of the left leg... O'Conner failed... That's the trouble with rules -- there's always an exception...

Potpourri III

Continental Drift:

I was once the attending physician for a group of chronic mental patients in a psychiatric hospital.

One patient, Bill, a manic depressive in his late 60's was a delightful man...

He greatly enjoyed socializing with the hospital staff during his good periods. Bill had periodic urinary incontinence which he found quite embarrassing...

One day while I was busy with paper work, Bill walked into the nursing office soaking wet. The head nurse who had a habit of teasing Bill with medical jargon asked, "Bill are you incontinent?"

Bill paused, but gave a serious reply, "Yeah, I am Canadian... Look, I peed in my pants... Can you help me?"

A few days later, I was preparing to examine Bill for fever, I noticed his pants were wet again. "Bill, I see that you're incontinent again!

Actually, Doc, I never left the continent," he replied. "By the way, which continent are you from?"

(Stitches)

A hunter announced that he had been tracking a grizzly bear...

"Did you get it?" asked a friend...

"I'm afraid not."

"Lost the track?"

"I never lose a track. The trouble was the track was becoming too fresh, so I said, the hell with it."

Potpourri IV

Like father, like son:

Our family group of four physicians decided to hang bulletin boards in our examining rooms. On these bulletin boards were a variety of educational material-- One of those was a pamphlet on genital herpes from the Ministry of Health...

Recently I saw an eight year old Jason, whose mother had brought him in for a sore ear. History and examination confirmed an acute otitis.

While I was writing up a prescription, Jason turned to the bulletin board and in a loud voice, reading the genital herpes pamphlet exclaimed, "When can I have sex again?"

As I hesitated briefly for a suitable reply, his mother spoke up in an exasperated tone: "He sounds like his father."

(Stitches)

Potpourri V

The Butterfly:

My mother-in-law Bonnie, suffered an ankle fracture and had an appointment to see a local orthopod whose second language was English...

As he entered the room, he was carrying a model of the human pelvis (an instructional aid for a later presentation to students) which he set down on a table. My mother-in-law who didn't have a clue what it was, felt it resembled a butterfly...

After examining Bonnie's leg, he pronounced all was well and started for the door, forgetting his model pelvis.

Bonnie reminded him, "Excuse me doctor, you forgot your butterfly"...

The venerable orthopod reached for his zipper, pulled it up firmly, stiffly thanked my mother-in-law and strode out the door.

Dr. George Burden (Stitches)

Medical Tidbits I...

An automatic defibrillator (AED) costs $3000...

Cardiac arrests account for 225,000 deaths yearly...

Fibrillation is part of sudden cardiac arrest and leads to loss of pulse, breathing, and unconsciousness...

CPR is of limited help. Fibrillation is part of sudden cardiac arrest and for each minute of distress, the chance of survival drops 10%...

Joint Protection:

A recent British study suggests that anti-inflammatories taken after a joint injury may help prevent the osteoarthritis that can often follow. The anti-inflammatories protect Type II collagen (a protein that is a major component of joint cartilage).

Systolic vs. Diastolic Pressures:

For many years the common belief was that diastolic pressure was more significant than systolic pressure in determining hypertension.

The officials at the National Heart, Lung and Blood Institute (NHLBI) have now announced that systolic pressure is a more reliable general sign of hypertension and that it is the best indicator as people age.

New guidelines recommend that BP for all ages be kept below 140/90 (130/85 for hypertension with diabetes) and as low as possible for heart and kidney failure patients.

Kids and Diabetes:

An ADA panel has recommended that in the past while nearly all cases of childhood diabetes were Type I, now Type II (an obesity related disease) has surged in children. Over weight children of African, Native American, Hispanic and Asian ancestry are at greater risk. Alan Moses of Boston's Joslin Diabetic Center says, "Tell your kids to run around."

Medical Tidbits II...

Different Stokes:

After former president Gerald Ford suffered one or two mild strokes during the Republican National Convention... the question was raised, "How could a team of specially trained physicians initially misdiagnose a stroke in a former president?

President Ford was first seen at Philadelphia's Hanemann University Hospital with a left earache, dizziness and treated with antibiotics and discharged only to return with classic stroke symptoms...

Replays of earlier TV interviews showed weakness Lt arm, slurred speech and weakness Lt face and leg as well.

There are two major groups of strokes,

a). Hemorrhagic stroke which can be detected with CT or MRI scans;

b). Ischemic stroke (clot obstructing blood flow), (also detected by CT or MRI) and which may not show up until 24 hrs later or never.

Ischemic strokes can be treated with tPA within 3 hrs of the event... What the former president's experience should teach us is the importance of recognizing symptoms and getting help fast...

Jan K. Smith MD, (Time Magazine, Aug 14)

Medical Tidbits III...

Are Statins Right for You?

Cholesterol Dip	
Diet and Exercise	10 - 20%
Pravachol	20 - 30%
Mevacor	20 - 30%
Baycol	29-30%
Zocor	40-50%
Lipitor	40-50%

Re Statins:

a). Decreased the death rate in heart attack survivors by more than 40% over the past 5 years.

b). Over 10 million Americans are already on statins; Antonie Gette, cardiologist and dean of Weil Cornell School of Medicine says, "But 6 to 7 million more may benefit from their use."

c). Presently the following criteria for starting STATINS:

1. LDL = 190 or higher
2. LDL = 160 or higher with 2 risk factors for heart disease, eg smoking, diabetes, or HTN and pts with LDL 130 + and heart disease
3. Many cardiologist are using ACE inhibitors with Statins...

Medical Tidbits IV...

The State of the Heart:

A new look at plaque... When there is too much cholesterol in our blood, plaques form inside the blood vessels... The plaques start an inflammatory process, attracting immune cells and causing a rise in CRP in our blood. Cardiologists can now measure CRP in cardiac patients. CRP can be checked with ASA and some of the Statins such as Pravachol and Mevacor which control clotting and inflammation... Heart attacks occur when a plaque ruptures and triggers a blood clot that blocks blood flow to the heart...

Nice Cuppa Tea:

A cup of tea calm your nerves, lifts spirits, but cannot prevent heart attacks.

Studies have shown that people who drink one cup of black tea a day have a lower risk of heart disease and strokes... Boston University researchers feel that tea works directly on blood vessels which have lost their elasticity. They speculate the flavonoids in tea protect the lining from inflammation, clots and abnormal thickening.



Aloha Laboratories, Inc.

...When results count

CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

David M. Amberger, M.D.
Laboratory Directory

Phone: (808) 842-6600
Fax: (808) 848-0663
E-Mail: results@alohalabs.com
http://www.alohalabs.com



Salutes Our Physicians

On National Doctor's Day
March 30, 2001

Mahalo nui loa for the care and comfort you offer
to our patients, their families, and loved ones.
The difference you make is not just one day out of the year.

If you don't think anyone would hire you to manage their investments, why are you managing your own?

Investment Consulting Services

If you are an individual investor or the administrator of a trust or employee benefit plan with assets of $100,000 or more, Morgan Stanley Dean Witter believes you deserve special attention.

Through our Investment Consulting Services department, you have access to the professional knowledge and experience of independent investment managers, affording you the same benefits that large institutional investors have enjoyed for many years.

To learn more about the consulting services we offer, please call:

Gwen Pacarro, CIMA
Sr. Vice President, Financial Advisor

Gary Pacarro
Financial Advisor

Pacific Tower, Suite 1600
1001 Bishop Street
Honolulu, HI 96813
(808) 525-6048

MORGAN STANLEY DEAN WITTER

Morgan Stanley Dean Witter is a service mark of Morgan Stanley Dean Witter & Co. and services are offered through Dean Witter Reynolds Inc., member SIPC. © 2000 Dean Witter Reynolds Inc.

Classified Notices

To place a classified notice:

HMA members.–Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.

Nonmembers.–Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

CARDIOLOGY OPPORTUNITY ON KAUAI– Seeking a BC/BE Noninvasive Cardiologist interested in adult clinical Cardiology. Candidates should also have an interest in consultative practice and experience in TTE, TEE, and Stress echo. Standard ICU procedures include Swan Ganz and temporary pacemakers. Kauai Medical Clinic is a 65-physician multispecialty group affiliated with Wilcox Health System's 181-bed community hospital. Excellent quality of life in a safe, beautiful, family oriented, rural community. Competitive salary, benefits and relocation package. Send/fax CV to: M. Keyes-Saiki, Kauai Medical Clinic, 3-3420 Kuhio Highway, Suite B, Lihue, HI, 96766-1098. Fax: (808) 246-1625. Phone (808) 246-1621. E-mail: mkeyes-saiki@wilcoxhealth.org

ANESTHESIA OPPORTUNITY ON KAUAI–Outstanding opportunity for a BC/BE Anesthesiologist. General anesthesiology with labor epidural; no cardiac, neurosurgery, or neonates. Kauai Medical Clinic is a 65-physician multispecialty group affiliated with Wilcox Health System's 181-bed community hospital. Excellent quality of life in a safe, beautiful, family oriented, rural community. Competitive salary, benefits and relocation package. Send/fax CV to: M. Keyes-Saiki, Kauai Medical Clinic, 3-3420 Kuhio Highway, Suite B, Lihue, HI, 96766-1098. Fax: (808) 246-1625. Phone (808) 246-1621. E-mail: mkeyes-saiki@wilcoxhealth.org

LOCUM TENENS– Board Certified FP available for summer Locum Tenens office coverage. Please call Vadim Braslavsky, MD (913) 685-7494 or visit www.concentric.net/~locumdr/1.htm.

LIVE IN BEAUTIFUL WAIMEA ON THE BIG ISLAND– Psychiatric practice for sale. 3 days/week, no hospital or night call. Currently grosses $160,000+/year; can easily be increased. Sale price $40,000. Call (808) 329-6298.

The Weathervane Russell T. Stodd MD

Are There Any Herbal Suppositories?
Ginkgo biloba is a popular over-the-counter herbal compound that is recommended to treat depression, dementia, peripheral vascular disease, age-related memory impairment, and anxiety. Interesting for eye surgeons, is that ginkgo biloba when used with aspirin, has caused anterior chamber hemorrhage. Now, a controlled study reported in *Lancet* involving 214 elderly patients followed over a period of 24 weeks, failed to find any benefit of Ginkgo biloba extracts in therapy for age-related memory impairment or dementia. This has caused some confusion because previous clinical trials showed a small but measurable beneficial effect on memory function. Experts postulate that the explanation is that the latest study used a suitable placebo which was able to mimic the pronounced taste and smell of ginkgo, and yielded a more accurate double masked study.

Always Watch Your Step, Even If You Are Not Going Anywhere.
To date, 42 states and the District of Columbia post their medical disciplinary actions on their web sites. Three other states are in the process of following suit. Only five states, Hawaii, Wyoming, South Dakota, Alaska, and Montana say they have no plans to electronically disclose the actions taken regarding errant physicians. Washington based *Public Citizen* says patients should be able to retrieve data by entering a physician's name and/or license number in a search engine. "Adequate information" would include the doctor's name, the offense committed, a summary of the misconduct, the disciplinary action taken and even a full text of the board order. *Public Citizen* also wants the web site to make available all actions taken within the past 10 years, monthly updates of each board meeting, a listing even after a physician's license is suspended, revoked or expired. Data would be deleted only if a physician is exonerated or a court overrules the board's action. So far, only two states, Maryland and Arizona, received an A grade from *Public Citizen*. Twenty-four states boards got a B, and four received an F. Ah, the wonders of our electronic age. If you still live in that dream world about your right of privacy ~ forget it!

The Most Dangerous Animal On Wall Street Is The Bum Steer.
Visx Inc. was flying high in 1999 when its stock was over $100 a share, but since then the stock has tumbled. The sagging economy, competition, and warnings about rare but permanent injuries resulting from lasik procedures have slowed the patient flow. With the announcement that 2000 fourth quarter earnings fell below expectations, Visx stock has descended an additional 25% to $9.31. Bausch & Lomb, Inc. also announced that its fiscal fourth quarter earnings fell below forecasts with the falling demand for surgery. At the same time a number of operators of lasik surgery chains jumped into the market, falling over each other to offer discount rates of $999 for both eyes as an introductory plan. As a result of growing reports about botched procedures, the U.S. Food and Drug Administration posted a warning to consumers to beware of slick advertising and surgical deals that sound to good to be true. Lola Wood, a spokeswoman for Visx, said "This is an industry in turmoil." Clearly, there still is a lot of shaking down before the technology, the equipment, the manufacturers, the promoters, and the doctors arrive at stability.

Everybody's Upset About Something.
Possibly the biggest issue the AMA House of Delegates could find to discuss at the December meeting is the "morning after" pill. The House voted to recommend that pharmacists be allowed to dispense the drug over the counter. At issue is the time factor. The patient may not have an opportunity to get an appointment with her doctor before too much time has passed. Specifically, the pill is not an abortive, but does prevent fertilization, therefore as in so many other things in life, timing is important. Of course, what the vote also means is that doctors are signing on to legalize the practice of medicine by pharmacists – something the druggists are often ready to do anyway.

One Should Forgive One's Enemies, But Not Before They Are Hanged.
After a seven year investigation precipitated by whistleblowers, the government has settled a criminal fraud complaint with Columbia-HCA Healthcare Corp. over Medicare billing to the tune of $95 million. The settlement comes on top of a $745 million civil claims settlement last May in regard to fraudulent billing practices. So far, the big corporate cheaters can sleep well, because no individuals were named, although Attorney General Janet Reno said that could happen. I doubt it. The really big muckamucks are very careful about the CYA game. Besides, it is a lot easier for the fraud team or attorney general to prosecute a small practitioner for careless coding, bookkeeping, or lack of documentation, than to sort out the big time cheats at Columbia.

Progress Is Made On Alternative Fridays.
Using light to cure illness is as old as mankind, since even our troglodyte ancestors knew that getting out into the sunshine was beneficial. LEDs (light emitting diodes) were originally designed for commercial plant growth research in space. Professor Harry Whelan, M.D. and some clever doctors at the Medical College of Wisconsin decided to try the same device to assist wound healing. The treatment is quick and painless. In a hospital trial on children with cancer-related oral ulcers, a small 9 by 11 centimeter box with an array of LEDs, was placed outside of the patient's cheek for one minute each day. The red light penetrated the oral cavity, promoted wound healing, and prevented further ulceration. Remarkably, the near-infrared light emitted by the LEDs seems to be perfect for increasing energy inside cells. Dr. Whelan, a U.S. Navy Reserve Commander, working with doctors at Navy Special Warfare Command centers, expanded the wound healing study. An LED device was used on men aboard an attack submarine, and reduced laceration healing time by half, and a 40% improvement was recorded in musculo-skeletal training injuries when treated with light-emitting diodes. At Wisconsin, the schedule is to continue the research for 18 months on 100 patients. A remarkable aside is that whether you are on dry land, in a submarine, or in a space ship, the LEDs will function to boost cellular energy and accelerate healing.

You Can Never Do Just One Thing.
The Arizona legislature wanted to encourage the purchase of environmentally friendly electric cars by allowing a $10,000 tax credit. Being priced at about $40,000, the electric vehicles are considerably more expensive than the standard family sedan. However in their eagerness, law makers created a loop hole for the golf cart which can be modified with headlights, brake lights, mirrors and a windshield at a total cost of about $6,500, and still meet the legal definition. Golfers can zip from the carport to the links, enjoy a round with other duffers, and cruise back home. Along the way they can savor a generous stop at the nineteenth hole, complements of a generous state $10,000 kickback.

Dogs Lead A Nice Life. You Never See A Dog With A Cell Phone.
A recent JAMA article provided a study of cellphones and found no evidence that the devices cause brain cancer in people who had used them for an average of less than three years. The finding of a rare type of brain cancer was not statistically significant. No data were presented addressing the issue of long term use. More interesting would be a detailed study about motor vehicle crashes and cellphones, since auto accident numbers related to their use are roughly parallel to those of driving under the influence of alcohol.

ADDENDA
- ❖ American efficiency - September 17, 1890, the first person was executed in the electric chair.
- ❖ The flu was first described in 412 B.C. by Hippocrates.
- ❖ 25% of all murder victims are killed by a relative.
- ❖ How many chiropractors does it take to change a light bulb? One, but it takes him six visits.
- ❖ The Ku Klux Klan has never produced any great composers.

Aloha and keep the faith —rts■

Contents of this column do not necessarily reflect the opinion or position of the Hawaii Ophthalmological Society. Editorial comment is strictly that of the writer.

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



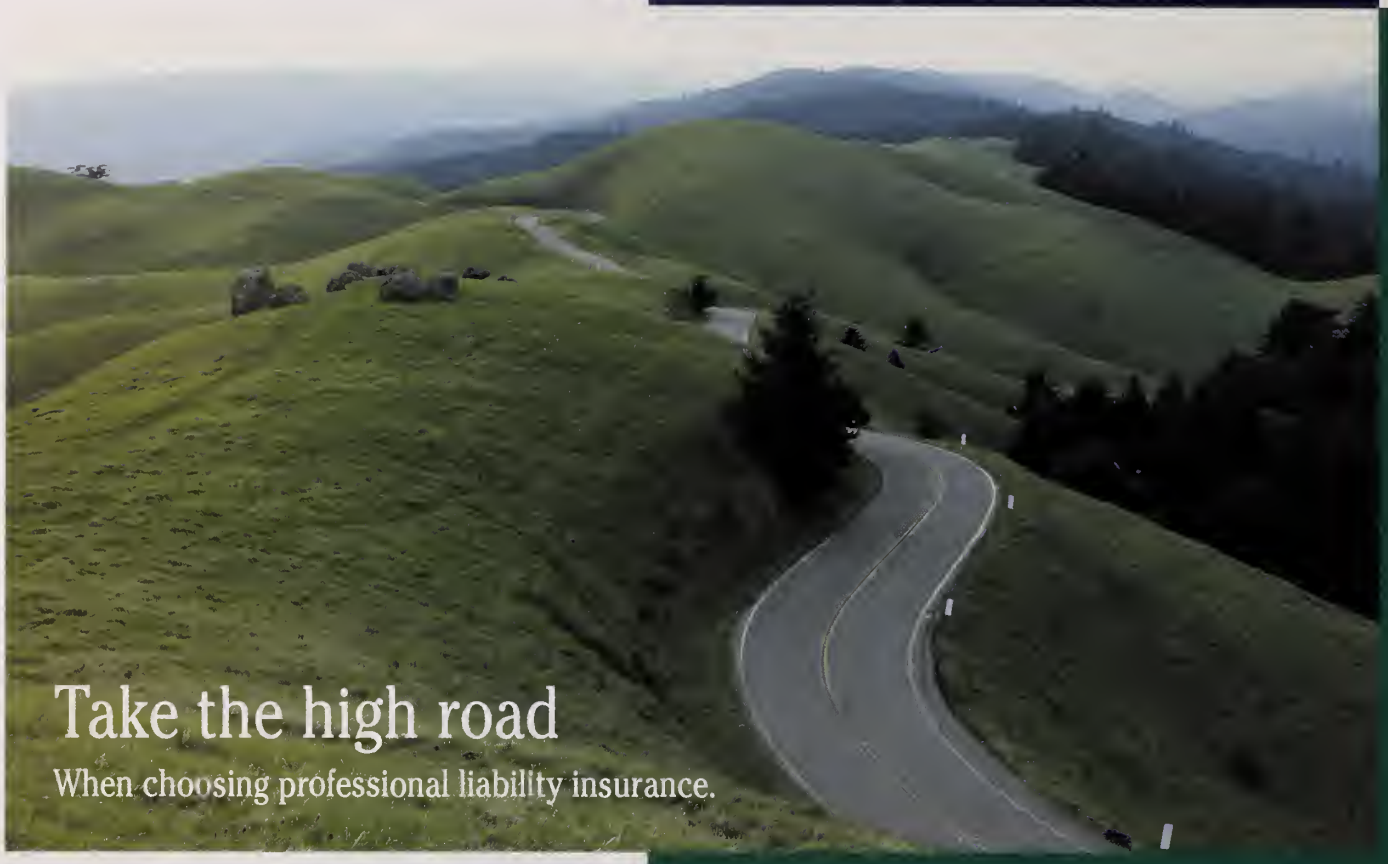
- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA



NO R ...EASE IN 2001

Hawaii medical journal
v. 60
no. 3
March 2001
Received on: 04-09-01
Brown University Library
SCI

THE SAFEST ROUTE IS
WITH AN EXPERIENCED GUIDE.

In Hawaii, that's MIEC. We are the West's first physician-owned, not-for-profit professional liability insurer. For more than a quarter century, we've protected doctors with financially secure coverage. We're also known for our unsurpassed, consistent track record of returning dividend credits to policyholders, when operating results permit. We've returned over $200 million.

Professional liability insurance is a long-term business relationship. At MIEC, we take this commitment seriously.

Choose the genuine original, MIEC.

Medical Insurance Exchange of California

6250 Claremont Avenue
Oakland, California 94618
800-227-4527
www.miec.com

HAWAII CLAIMS OFFICE:
1360 South Beretania Street,
Honolulu, Hawaii 96814

Rated "A" (Excellent) by A.M. Best

Sponsored by the Hawaii Medical Association

HAWAII MEDICAL JOURNAL

April 2001 Volume 60, No. 4 ISSN: 0017-8594



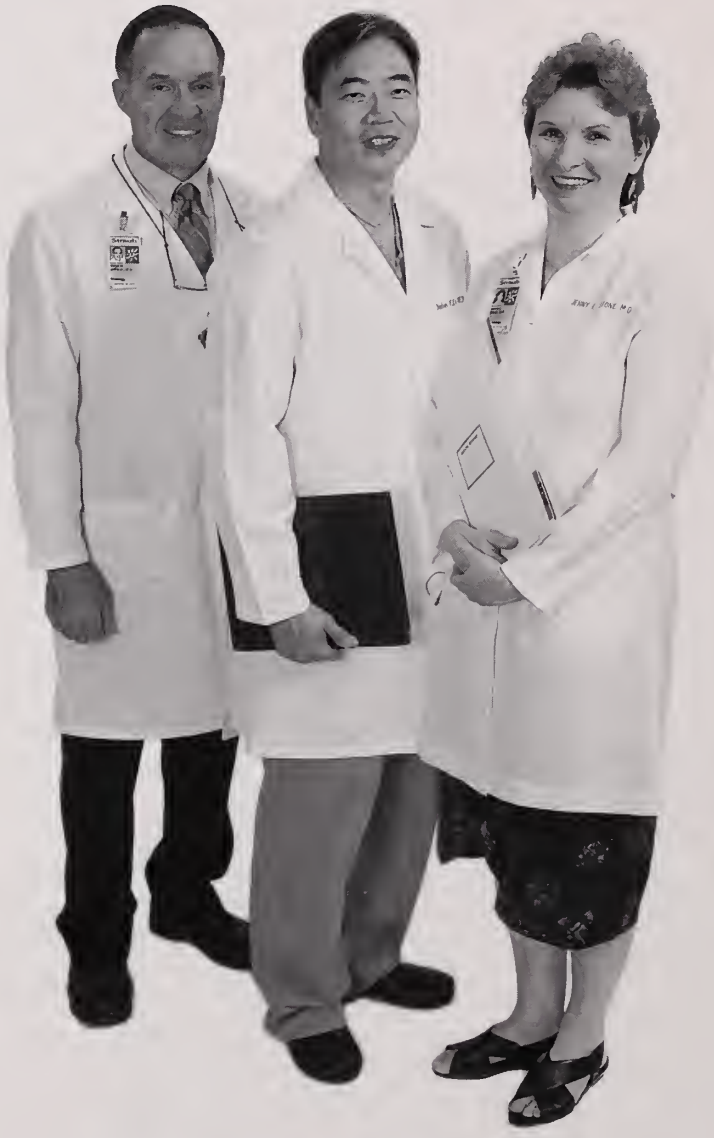
MIXED ADC 967
Serials Dept
Sciences Library
Box 1
Brown University
Providence, RI 02912-0001

Our pledge to you

As Straub physicians, we welcome your referrals... and pledge to:

- Report our evaluation to you promptly by phone, fax or mail (whatever you prefer).
- Never make secondary referrals without your approval.
- Always direct the patient back to you for continuing care.

To make your referrals easy, we have a Physician Referral Specialist, Kym Kaohi. To contact Kym and to get a binder on Straub specialists and services, call 522-4444.





For assistance, call Kym at 522-4444

Straub
Partners in health
straubhealth.com

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
John Breinich MLS, Satoru Izutsu PhD, James Lumeng MD, Douglas G. Massey MD, Myron E. Shirasu MD, Frank L. Tabrah MD, Alfred D. Morris MD

Journal Staff
Editorial Assistant: Drake Chinen

Officers
President: Philip Hellreich MD
President-Elect: Gerald McKenna MD
Secretary: Calvin Wong MD
Treasurer: Paul DeMare MD
Past President: James Lumeng MD

County Presidents
Hawaii: David Camacho MD
Honolulu: William McKenzie MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Gardner Quarton MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 2001 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 84

Risk Management, The Medical Claim Conciliation Panel
"A Defense Prospective" by Edmund Burke Esq. and
"A Claimant's View" by L. Richard Fried, Jr. Esq. 84

Editorial: A.A. "Bud" Smyser
Norman Goldstein MD 85

"Hawaii's World," from the Honolulu Star-Bulletin
A.A. "Bud" Smyser 86

Medical School Hotline
M. Scott Hickman (Medical Student II) and Deborah Miller 95

Box jellyfish (*Carybdea alata*) in Waikiki: Their influx cycle plus the analgesic effect of hot and cold packs on their stings to swimmers at the beach: a randomized, placebo-controlled, clinical trial.
Craig S. Thomas MD, Susan A. Scott RN, BA, Daniel J. Galanis PhD, and Ralph S. Goto BA 100

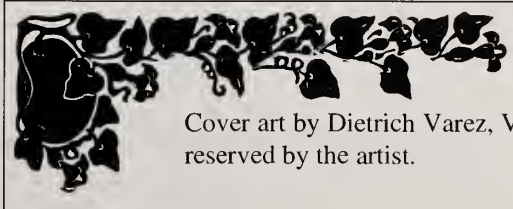
Case Report: Pseudo Pseudothrombocytopenia
Robert T.S. Jim MD 108

Cancer Research Center Hotline
Brian Issell MD and Hali Robinett MPH 109

News and Notes
Henry N. Yokoyama MD 111

Classified Notices 113

Weathervane
Russell T. Stodd MD 114



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

Laukia

Laukia was a mythical woman who pursued her errant husband by riding the back of a turtle.

Editorial

Norman Goldstein MD
Editor, Hawaii Medical Journal

Editorial - April 2001

Our manuscripts this month deal with medical problems.

Problems include those reviewed by the Medical Claim Conciliation Panel, the issue of Box Jellyfish in Waikiki, and a "pseudo-pseudo" problem.

While attending the risk management seminar sponsored by the Hawaii Association of Physicians for Indemnification (HAPI), I heard the views of two attorneys with a great deal of experience – Edmond Burke, Esq., specializing in medical malpractice, and L. Richard Fried, Jr., Esq., representing "the other side," i.e. the plantiffs in medical malpractice. Their full presentations were originally printed in the Hawaii Bar Journal in August 2000, and are here reprinted for our readers, with permission of the Hawaii Bar Journal. If, after reading these manuscripts, you have the inclination and interest to serve on the Panel, I am sure that Ed Burke and Rick Fried would be happy to give you further information. The Medical Claims Conciliation Panel can use more medical assistance.

The second paper concerns the problems of box jellyfish stings in Hawaii. The authors emphasized their study does not pertain to Portuguese Man of War, but to Box Jellyfish. Hot packs appear to help the stings somewhat; cold packs probably do not help much; and the authors actually prefer spraying the Box Jellyfish stings with vinegar. Corollary question is why do the jellyfish appear on the 9th or 10th day after the full moon, and only on the leeward shore of Oahu, especially Waikiki Beach?

Craig Thomas MD and Susan Scott RN should be familiar to our readers. Craig is an Emergency Room physician, and Susan is the Marine Science writer for the Honolulu Star-Bulletin. They are authors of All Stings Considered - First Aid and Medical Treatment of Hawaii's Marine Injuries, reviewed in the Hawaii Medical Journal in November 1997.[1] Craig and Susan also have authored Pests of Paradise and Poisonous Plants of Paradise. This troika should be in every physician's office, first aid station, school nurse's office, and hospital emergency room in the state.

Pseudo-pseudo conditions in medicine usually present interesting problems. Robert Jim MD, presents a brief case report of a fictitious platelet clumping due to a delay in preparation of a blood smear. The Journal thanks Dr. Jim for his many contributions to the Journal, and to the publications committee of the Hawaii Medical Assocition.

Reference

1. Goldstein N. All Stings Considered: First Aid and Medical Treatment for Hawaii's Marine Injuries, Book Review Haw Med Journal v 56, 309 Nov 97.

Special Contribution

Risk Management
The Medical Claim Conciliation Panel

A Defense Prospective
by Edmund Burke, Esq.

And

A Claimant's View
by L. Richard Fried, Jr., Esq.

Editors note:
In the March issue of the Journal, we had two manuscripts written by physicians who were also attorneys, S.Y. Tan and Terry Shintani.

The authors of the following two manuscripts are attorneys, not physicians, but they know physicians and medicine and the legal problems of medicine.

A DEFENSE PROSPECTIVE
by Edmund Burke

When I first heard of the MCCP legislation in 1976, my reaction was absolutely negative. The idea of proceeding to a hearing of potentially complex issues of medical negligence with no discovery, no rules of evidence, and no binding result bordered on the ridiculous. The original hearings were almost traumatic involving such no-no's from trial practice as asking the opposing witnesses questions when you did not know the answer, listening to all kinds of hearsay on hearsay, and being confronted with written reports from opposing experts with no chance of cross examination. However, even without the rudimentary safeguards and procedures from a regular trial, it became evident that the basic facts of each case were placed on the table. The essentials of a case that would take 2 to 3 weeks to unfold before the jury were placed before the Panel in 3 to 4 hours. The give and take, comments, and questions from Panel members usually got to the heart of the matter and the decisions seemed to have a rational basis whether you agreed with them or not.

After watching this process through several cases, it soon became evident to me that many cases were being eliminated at the MCCP level and were not proceeding to suit. Most of the terminations were plaintiffs electing not to proceed to suit following an MCCP hearing. In some instances, the defense became convinced the case was a probable loser and settled. As a result of considerable experience in the process during the first year of operation, I was converted from a negative skeptic to a believer that the panel process did effectively

Continues on page 91

Until there's a cure, there's the American Diabetes Association.

A.A. "Bud" Smyser
Dec. 18, 1920 - Mar. 19, 2001

A.A. "Bud" Smyser died at the Queen's Medical Center on March 19, 2001. Bud was a newspaper man for all his professional life. He worked at the Honolulu Star-Bulletin since 1946 as a reporter, City Editor, Managing Editor, Editor in Chief, and Editorial Page Editor. Bud officially retired in 1983, but continued to write his "Hawaii's World" column twice weekly. Abstracts of his life story have appeared in both Honolulu's daily newspapers. Editorial cartoonists Corky Trinidad of the Star-Bulletin and Dick Adair of the Advertiser have captured the feeling of his newspaper colleagues. And he touched a lot of people in Hawaii, with his early support of Hawaii Statehood; promotion of the Kaiser Permanente Health System; the Star-Bulletin stand on women's rights; formation of the East-West Center; fostering the Hospice movement in Hawaii; relief for cancer patients and others with pain; advice to the terminally ill patients and their physicians; and finally in his stand on Doctor-Assisted Death with Dignity.

> It would be a fitting tribute to the way Bud Smyser led his life, and to his passing, if Hawaii's lawmakers take a serious look at the work of the Blue Ribbon Committee on Living and Dying with Dignity, on which Smyser served.[1]

Bud died, as he lived, with dignity. A massive brain hemorrhage, caused by a fall at home in his garden, meant that there was no chance of saving his life. After emergency treatment at Queen's Medical Center, his family followed Bud's wishes in asking for no life-support measures. Bud passed away peacefully at 4 AM on Monday, March 19, 2001, without the need of physician assistance.

Bud served on our Governor's Blue Ribbon Panel on Living and Dying with Dignity, and he wrote very insightful pertinent columns in the Honolulu Star-Bulletin. Through the years, the Journal has reprinted his articles dealing with Hospice in Hawaii; reduction of pain in cancer patients; and the controversy over what I termed "DADD", Doctor Assisted Death with Dignity.

In this issue of the Journal, we reprint his last three columns as a special tribute to him. His last was written just one week before his fall, entitled "A Better Way to Die."

I had planned to propose that our medical school grant Bud Smyser an honorary medical degree for his thoughtful prose in support of hospice, pain relief, and doctor-assisted death with dignity. But Bud, as modest as he was, perhaps would have vetoed my proposal.

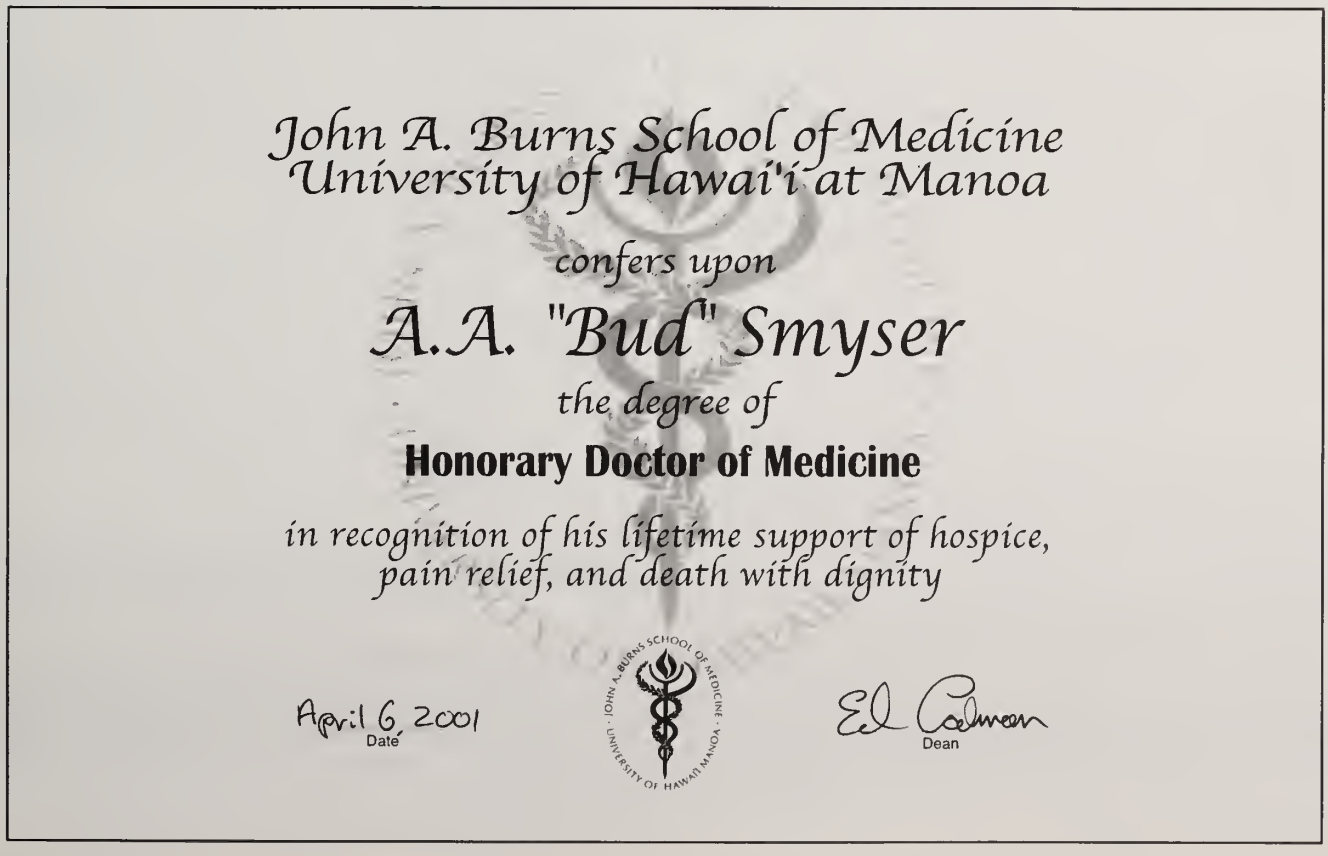
Well, Bud, you can't edit me now, so here it is:

A.A. "BUD" SMYSER,
HONORARY DOCTOR OF MEDICINE

Mahalo to his wife, Dee, and their family for sharing Bud with all of Hawaii.

Norman Goldstein, MD, Editor

1 Editorial on A.A. "Bud" Smyser: Com petitor, Conscience; Honolulu Advertiser, page A-16, Tuesday, March 20, 2001.



Hawaii's World by A.A. Smyser

Honolulu Star-Bulletin



3/19/01 Star-Bulletin, Evening Edition

More people should use hospice
August 10, 2000

You won't see an ad like this, but I rather wish you would:

WHAT'S SURER THAN TAXES?
DYING, that's what!
Why not do it comfortably and with grace?
Call Hospice months before the event.
You and your loved one will never regret it.

I am no longer involved with either St. Francis Hospice or Hospice Hawaii, the two providers on Oahu.

But I know they still are lovingly managed and can do wonders in the grace and comfort area for both terminally ill people and their loved ones.

I know too, that they have a common complaint. Patients ask their help too late – only about 20 days before dying on the average, sometimes only a few days before.

The U.S. government, which is fairly hard-headed about such things, is willing to fund hospice care for the last six months of life under both Medicare and Medicaid. Many medical plans do, too.

For most terminally ill people, hospice is a win-win choice. More appropriate care. Lower cost.

My first encounter with hospice was in London in 1977. The Star-Bulletin had run a series of articles on the inadequacies of terminal care. I wanted to see it done right.

I arranged to visit the very first modern hospice, St. Christopher's, in a quiet, middle-class residential district of London. It was a homey building where the nearly daily arrival of ambulances and hearses was mostly out of common view.

I entered with some apprehension, went away uplifted. One particular unplanned incidence is illustrative. A woman rushed up to my doctor-guide to exclaim: "Oh Dr. West, my father has his sense of humor back!"

Her father was a comic on the British Stage. He had been miserable at home in his final illness. St. Christopher's got rid of his pain, kept him in caring surroundings, and soon he was wise-cracking again.

Today hospice care can be either in-patient or at-home. The difference that makes either succeed is the loving skill of hospice personnel in ending pain, counseling loved ones, and arranging for an orderly closing of personal affairs.

The big hurdle – the one that makes most admissions too late – is that the patient himself or herself must recognize his or her terminal status, then ask to shift to hospice care.

This can be a be a terrible wrench, but one for the better. Many physicians are reluctant to push it. Perhaps they see it as a defeat for their aggressive treatment efforts. Timed fight, it is a wonderful relief from them – and that means timed several months before death rather than just 20 days or so.

I'm sorry you aren't likely to see the above great public service ad anywhere but in the column. But do keep it in mind.

When you or someone close to you is in need, don't hesitate to call a hospice, if only for advice: St. Francis Hospice's Sister Maureen Keleher Center at 595-7566, Hospice Hawaii at 924-9255.

Both have been at their kindly work for some 20 years and draw overwhelming praise for their efforts.

St. Francis has in-patient facilities in Nuuanu Valley and at its hospital's West Oahu annex. Hospice Hawaii has one at Enchanted Lake. It recently authorized a search for a Honolulu location.

Some readers know me as an advocate of doctor-assisted death in certain unbearable circumstances. But these likely would be less than 100 a year statewide. Hospices in Hawaii help about 1,500 people a year. They could, if asked, help several times that number.

Assisted death is on the ballot in Maine
September 28, 2000

Tuesday I wrote favorably about Hawaii's ballot question No.1 for Nov.7 – whether to insert into our state Constitution a provision that the University of Hawaii shall have autonomy over its own affairs. The state of Maine's ballot question No.1 also may have long-term significance here. It is allowing terminally ill patients to opt to shorten their lives with self-administered medications.

Supporters are optimistic of a victory but say they expect the Catholic Church to spend large amounts to defeat it. That spending will be focused on the remaining 40 days. Oncologists, who treat cancer, also are advertising against it.

The cause gained a prestigious endorsement form the editor of the influential New England Journal of Medicine, Maria Angell. She stated that relieving suffering is more important than extending life.

The Maine legislature refused to put the assisted death question on the ballot, but it got there by way of a citizen initiative that collected some 52,000 signatures, about 10 percent more than required.

The city editor of the newspaper in Maine's biggest city, Portland, is Linda Fullerton. She notes that bypassing the legislature with a ballot initiative has had previous successes in Maine, most recently to legalize marijuana for medical purposes.

Should a yes vote prevail in Maine, America then will have two states where assisted death is legal – Oregon and Maine. Usage in Oregon has been for far less than 1 percent of all deaths.

Governor Cayetano formed a panel in 1996 that in 1998 recommended Hawaii also allow assisted death. I was in the 11-7 majority that would provide it, under strict controls, to persons with intolerable suffering that can neither be cured nor palliated.

We left out the "terminally ill with less than six months to live" requirement that is law in Oregon and proposed for Maine. We joined with a national blue-ribbon panel that considered unrelievable intolerable suffering deserving of the option of death even if the patient is not terminal.

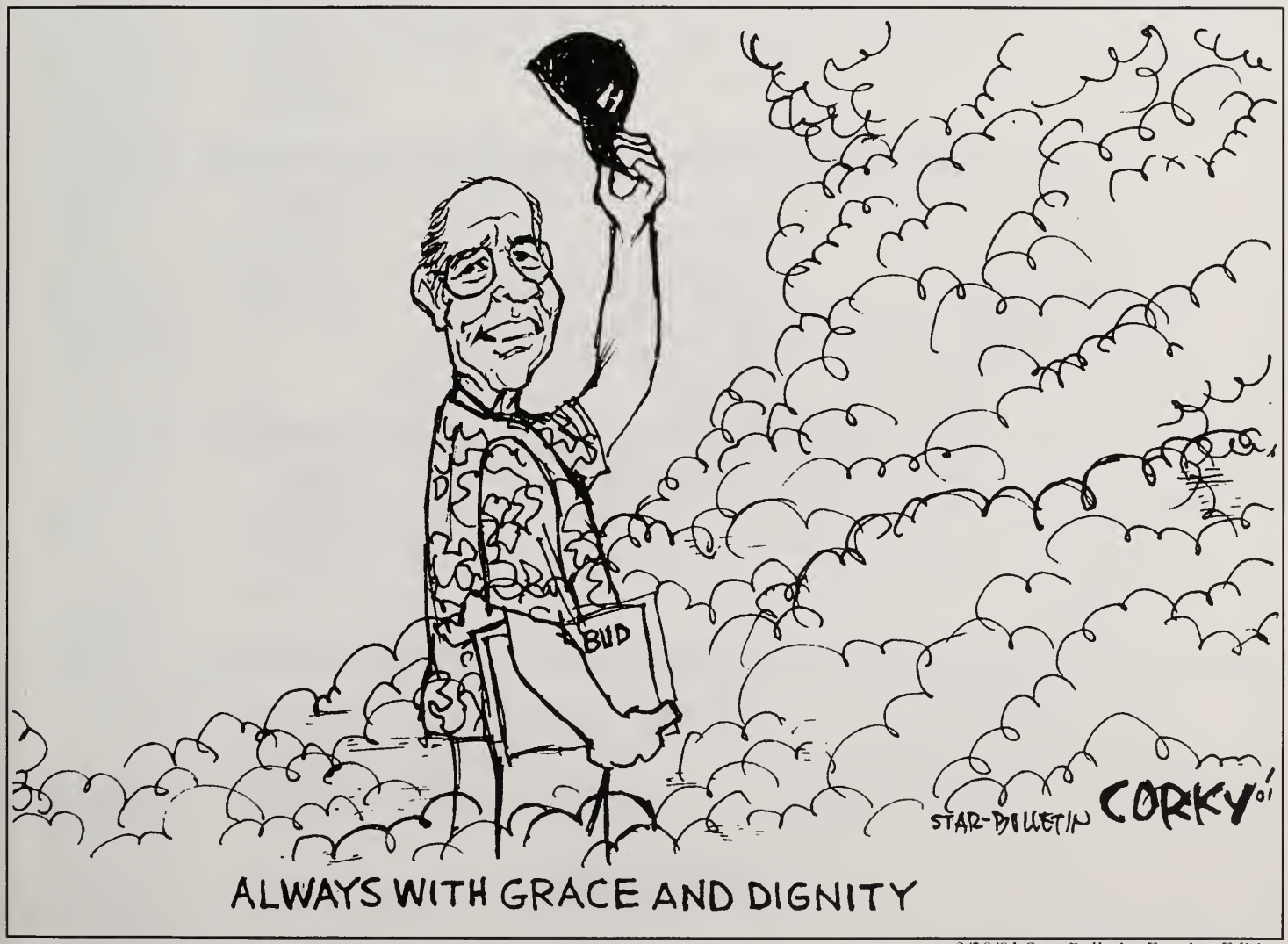
Committees in both houses of the Hawaii legislature heard our proposal but never brought it to a floor vote.

A victory in Maine might reinvigorate us for another try in 2002. Governor Cayetano is in favor. Opinion polls show a comfortable margin of public support. The Catholic Church will remain our major roadblock. It works to have strong influence with key legislators.

In Oregon, in the Maine referendum and in the Hawaii proposal the safeguards are many-tiered.

The Maine initiative requires two physicians to certify terminal status, an opinion by a physician familiar with the patient's disease, consultation with both palliative care specialist and a licensed counselor, two personally communicated requests form the patient plus one written one, a 15-day waiting period plus a final 48-hour waiting period. Phew!

The proposal for Hawaii is similarly wrapped in provisions to prevent abuse. My long-term hope is that experience will allow these to be simpler in the spirit of mercy.



3/20/01 Star-Bulletin, Evening Edition

A better way to die
March 19, 2001

HOW will you react if your physician says you are terminally ill? Most probably, after time to think about it, you:

>> Won't want to be a burden on your loved ones.

>> Will hope to avoid pain and indignity.

>> Will want to avoid being pauperized with treatment costs eating up dollars you want to leave to your heirs.

>> Would like assurance you won't die alone.

These reactions are common in the experience of Dr. Ira Byock, a recent lecturer here who has worked with hundreds of patients in Montana who have received such news.

He is a former president of the American Academy of Hospice and Palliative Medicine, a prominent spokesperson for the hospice movement and author of "Dying Well." His appearance here, sponsored by The Queen's Medical Center and Hospice Hawaii at Home, drew an SRO audience of 300.

Byock has learned that dying does not have to be agonizing. Physical suffering can *always* be relieved, he says.

Then, when people are relatively comfortable and know they will not be abandoned, they frequently find ways to make dying a rich experience. They can strengthen bonds with those they love, forgive and make up with those with whom they have differed, and create moments of profound meaning in their final passage.

It happens in Hawaii often, thanks to our seven hospices, but not often enough. Only about 20 percent of terminal patients here seek hospice care.

That's better than the national figure of 15 percent, but still woefully low for two reasons. First, hospice love and care can help most dying persons, not a measly one-fifth.

Second, most people wait too late to turn to it. Several months at least of hospice care are desirable. These usually can be covered by insurance. Unfortunately most patients and/or their care-givers wait until just a week or so before the end to call a hospice.

Why do so few choose this humanitarian way to die?

The answer in a February article in Hawaii Medical Journal is many-faceted:

>> Too many physicians are underinformed.

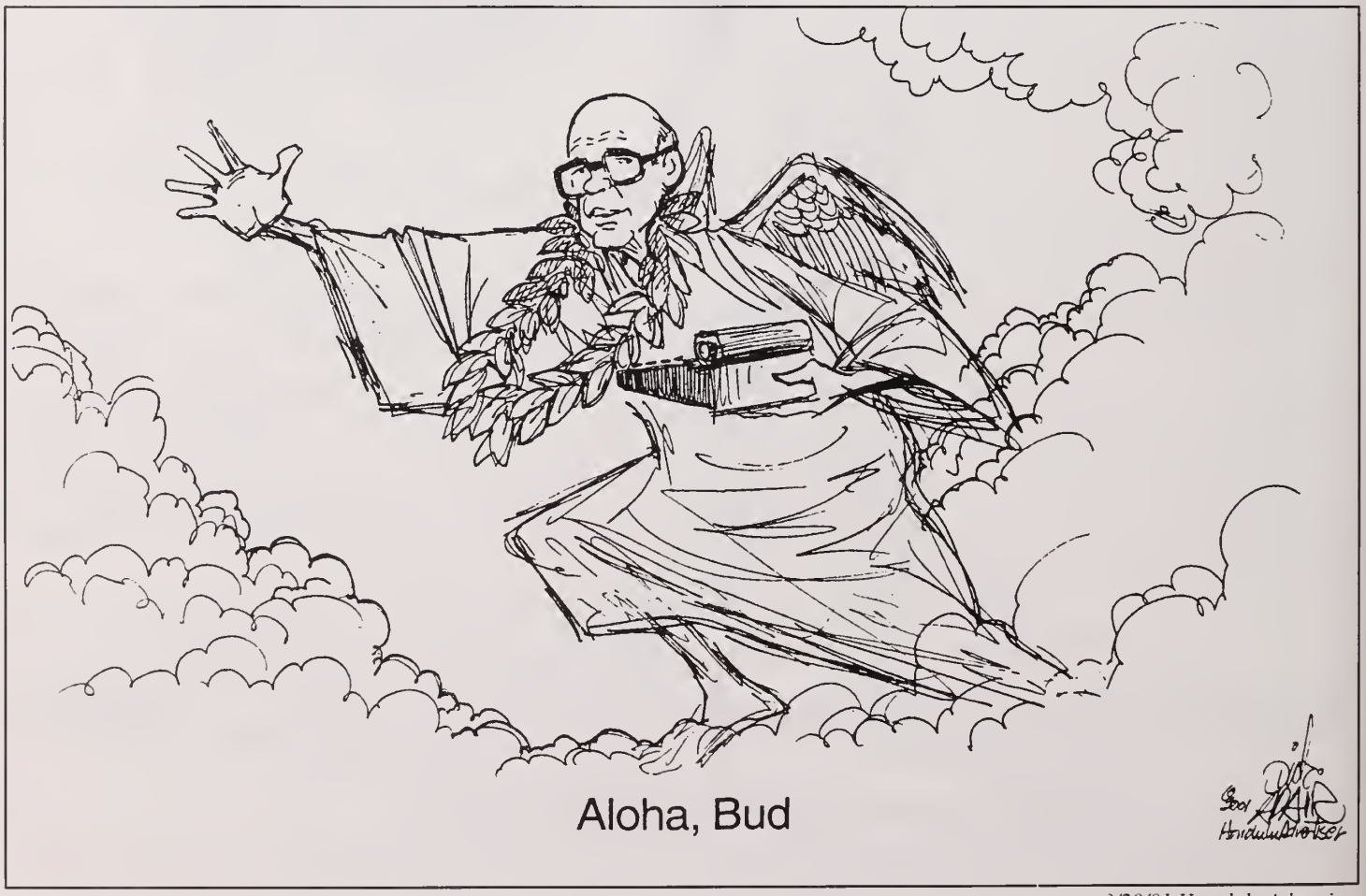
>> Even those who are informed may not find time to discuss preferences in dying while the patient is still well. Even allowing that attitudes may change, the best time to start is while in good health.

>> Family conflicts often suppress full discussion of options. This can lead to overtreatment and expense to even try — regardless of cost — to save a doomed loved one. Their inevitable deaths are made unnecessarily painful and prolonged.

>> Religious and cultural factors. Surveys show that most people would prefer to die at home yet our deaths overwhelmingly take place in hospitals or nursing homes.

Surveys in Hawaii also have shown that most people would like the option of doctor-assisted death or suicide. But most physicians oppose it.

Dr. Byock is not for it but welcomes debate over it because it calls more attention to the inhumanity of the way we often handle dying.



3/20/01 Honolulu Advertiser

Straub welcomes these outstanding new physicians

ANESTHESIOLOGY



Dr. Jeffrey Lunn is Board Certified in Anesthesiology and Critical Care Medicine. He received his Doctorate of Medicine from University of North Dakota School of Medicine. Residency at Mayo Graduate School of Medicine. Joins Straub after 18 years at the Mayo Clinic.



Dr. Audie Asistin is Board Certified in Anesthesiology. He received his Doctorate of Medicine from Fatima College of Medicine. Residency at University of Utah Medical Center.

CARDIOLOGY



Dr. David Lee is Board Certified in Cardiovascular Disease and a Fellow of The American College of Cardiology. Special interests include Invasive and Interventional Cardiology. He received his Doctorate of Osteopathic Medicine at the University of Health Sciences College of Osteopathic Medicine in Kansas City, Missouri. Residency and Cardiology Fellowship at St. Francis Hospital of Evanston, IL. Fellowship in Vascular Medicine at the Cleveland Clinic Foundation.

GYNECOLOGY



Dr. Jenny Uramoto is Board Certified in OB/GYN. Special interests include adolescent gynecology, family planning, preventive care and menopause. She received her Doctorate of Medicine from University of Hawaii, John A. Burns School of Medicine. Residency at University of Hawaii, John A. Burns School of Medicine.

ORTHOPEDICS



Dr. David Manning is Board Certified in Orthopedic Surgery. Special interests include General Orthopedic practice with an emphasis on Sports Medicine and Arthroscopic Surgery. He received his Doctorate of Medicine at Northwestern University. Residency at University of California, San Francisco.

Straub

Partners in health

888 South King Street • Honolulu, HI 96813 • Phone: (808) 522-4000 • 24-Hour Appointment Line: 522-4777

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA

eliminate non-meritorious claims and led to settlement of some, but not all, meritorious claims.

Some Benefits of the MCCP

Early Elimination of frivolous or unmeritorious claims.

First of all, the parties receive from the MCCP process what they put into it. There are certain claimants' attorneys who look upon the MCCP as a temporary impediment to filing suit. They do not present a case, expect to lose at the MCCP, and sometimes wind up in a costly lawsuit which they lose. There are, however, certain cases involving complex medical issues that do not readily lend themselves to the MCCP process when "the devil is in the detail" and extensive discovery is needed to get the details. In the vast majority of cases going through the process of retaining an expert and having the case professionally evaluated points up strengths and weaknesses to both sides.

The cases where the plaintiff elects not to proceed with suit after an MCCP decision usually fall into two categories. The first involves claimants who proceed without counsel primarily to determine why the medical care received was not successful. These individuals are dissatisfied with the result, and in many cases shocked and surprised over what they perceive to be the sudden death or catastrophic injury to a loved one. They are primarily looking for answers which the defendant doctor unfortunately did not explain at the time of treatment or the time of death. They are not so much accusing the doctor of negligence as seeking an answer to the question of whether there was negligence. The MCCP process, including any comments by the Panel members, is often effective in satisfactorily answering these questions and terminating the claim.

The second example is the case that claimant's attorney proceeds to the Panel hearing without expert support or only very weak expert support. When expert evidence is utilized at an MCCP hearing, it is commonly presented by way of written report. Alternative methods of presenting include the expert testifying by telephone conference call, especially when out of state, and on relatively rare occasions the expert appearing at the hearing. A full on hearing with testimony from all of parties, supporting expert evidence, and submission of supporting medical literature gives the best prospect for an MCCP decision that reflects what a jury could be expected to do. One of the most important aspects of a well-conducted hearing is the opportunity to evaluate the witness quality of each party. In analyzing those cases that proceed no further after the MCCP, I have concluded that the plaintiffs have, for the first time, received a detailed explanation of why the bad result occurred and have been convinced that there was no wrongdoing. There may also be a change in the perception of the defendant doctor from the bad guy who caused the bad result to a reasonable person who did reasonable, rational things that proved unsuccessful.

From a defense viewpoint, certain well-presented plaintiff's cases plant the seeds for settlement. Even though a settlement may not be immediate and presuit, many of the motivating factors for an eventual settlement start out with impressions created at an MCCP hearing.

Elimination of some of the Plantiffs and some of the Defendants in Multi-Party Cases.

A very common scenario in MCCP claims is the case where nearly all medical care providers involved in claimant's treatment are named as respondents. This occurs especially in those situations where counsel is retained at the last minute before the running of a two-year statute, and feels compelled to name everyone in sight with the idea of later dismissals. Even where there has been a selective naming of respondents, there are many cases in which a given doctor has explained his or her role so convincingly during the hearing that they are not included in a later lawsuit. In somewhat rare instances where multiple plaintiffs have been included, the MCCP process may eliminate certain of the claimants. This is especially true in the mass tort cases such as silicon breast implants, Fen-Phen, etc.

Statistics Showing the Effect of the MCCP Process.

In evaluating the effectiveness of the MCCP process, it would be helpful to know what percentage of claims proceed no further after the MCCP decision. It would also be helpful to know how the MCCP decision correlates with verdicts and judgments if the case proceeds through suit. In Richard Fried's portion of this article, he describes the statistics indicating the percentage of cases that plaintiffs win or lose at the MCCP, and these statistics are contained in the annual report promulgated by the Department of Commerce and Consumer Affairs, State of Hawaii. Unfortunately, there are no published statistics that answer the above questions.

In the past, surveys have been taken, and in the early years of the MCCP, approximately 70 to 80% of the claims did not go on to lawsuits. I am advised by my insurance clients that although they have no hard and fast data on this point, roughly 55 to 60 % of the MCCP claims currently do not proceed into lawsuits.

Obviously of the cases that do proceed to lawsuits, many involve claims in which the MCCP has found no actionable negligence. Approximately 36% of medical malpractice lawsuits against doctors are settled. Forty-four percent are terminated either through voluntary dismissal or summary judgment. Of those cases that proceed through trial to jury verdict, approximately 76% are decided in favor of the defense. The above percentages are fairly rough approximations since no organization is attempting to maintain precise statistical data in these areas. These statistics are applicable to doctors and not to hospitals or claims against Kaiser. Claims against Kaiser are usually processed through arbitration, not the court system.

From the available data, both as far as MCCP results and lawsuit results, it is obvious that medical malpractice cases present a real challenge for plaintiffs. Success requires thorough and expensive preparation, and primarily the selection of knowledgeable, honest, and articulate experts. Each case that survives summary judgment has one or more expert witnesses supporting plaintiff's cause. It is, therefore, not enough just to have a supporting expert.

Claimant's attorney should also be aware that a defendant doctor has virtual veto power over the settlement of a case because of the consent clause in most insurance policies. There are real consequences to consenting to settlement from a professional viewpoint such as being reported to the National Data Bank and to the State of Hawaii Regulated Industries Complaint Office (RICO). An adverse decision by the MCCP, by a court, or settlement each trigger reporting to RICO. That organization will then initiate its own investigation and in certain cases the doctor's medical license may be in jeopardy.

Legislative modifications

It is the filing of a medial malpractice claim with the MCCP that tolls the statute of limitations. The filing of a lawsuit before an MCCP decision will not toll the statute.[1] Originally, cases filed with the MCCP that were taken off calendar for a hearing could languish indefinitely under MCCP jurisdiction. H.R.S. § 671-18 corrected this potential for indefinite delay by limiting the MCCP jurisdiction to 18 months.[2] The Administrator notifies the parties at the end of 18 months that jurisdiction has been terminated, the statute of limitations is running again, and the claimant is free to file suit.

In order to foster meaningful hearings before the MCCP, H.R.S. § 671-19 provides that the panel can determine when a party has not cooperated with the MCCP. If a lawsuit later follows, the trial court has discretion to sanction the non-cooperating party based upon the finding of lack of cooperation by the MCCP.

A filing of an MCCP claim against a doctor has the effect of requiring that doctor is to disclose the fact of a claim in later applications for hospital staff privileges, insurance applications, etc. The MCCP has now been empowered to determine that certain MCCP claims are frivolous, thus allowing such claims to be expunged from the MCCP records.[3]

Conclusion

The MCCP has proved beneficial in reducing the number of claims that would otherwise be initiated as lawsuits. The information learned by both plaintiffs and defendants during the MCCP process has facilitated the pretrial settlement of many cases. In order for the process to be effective, however, both sides need to be prepared and present at least the essence of the claim and the fundamental defense at the MCCP hearing. Since more cases are settled than tried, it is in the best interest of all parties to meaningfully share information through the MCCP process, as opposed to the lengthy discovery process in preparation for trial.

1. See *Tobosa v. Owens*, 69 Haw. 305, 741 P.2d 1280 (1987).
2. See also H.R.S. § 671-16.
3. See H.R.S. § 671-15.5(a).

Edmund Burke graduated from the U.S. Navel Academy (B.S., 1956) and University of California at Berkley (Boalt Hall, 1963). He has practiced in Hawaii since 1966, specializing in medical malpractice, products liability, personal injury, and commercial litigation.

A CLAIMANT'S VIEW OF THE MEDICAL CLAIM CONCILIATION PANEL

By L. Richard Fried, Jr.

The enactment of the law relating to the Medical Claim Conciliation Panel and related legislation was prompted by an alleged crisis in the area of malpractice insurance and was intended to stabilize the medical malpractice insurance situation by reintroducing some principles of predictability in spreading of risks.[1] The 1976 law established the short-lived patients compensation fund, put some limitations on fees and implemented other so-called "protections" for health care providers. One of the "protections" was the Medical Claim Conciliation Panel "MCCP".

The MCCP is responsible for conducting informal conciliation hearings on claims against healthcare providers before such claims can be filed as lawsuits. The decisions of the MCCP panels are advisory in nature and not binding on the parties, in the event that any party still wishes to pursue the matter in court.

The primary purpose of the MCCP programs are achieved when the parties make conscientious and thorough presentations to the MCCP panels. In such cases, the decisions rendered by the panels provide the parties with fairly accurate advisory determinations of the relevant merits of the claims, which should assist the parties in evaluating whether the claim should be pursued in the judicial system.

The MCCP also provides opportunities for the parties to exchange information in a relatively expedited and inexpensive manner, which in turn provides opportunities for the parties to explore the conciliation of meritorious claims prior to such claims being brought before a court.

Do the benefits of the MCCP process outweigh the drawbacks? I believe the answer is a resounding "yes". That being the case, how can a claimant's counsel make the process meaningful? Let me first review some of the procedural matters and I will then explain why I believe the benefits out-weigh the drawbacks and how those of us representing claimants can make the process meaningful.

MCCP Procedures

The claimant files a claim with the MCCP paying the appropriate filing fees before the expiration of the statute of limitations. This can be a simple letter setting forth the basis of the medical negligence and identifying the claimants and the respondents. Once the claim is filed, the statute of limitations is tolled for 60 days following the mailing of the panel decision or for a maximum of 18 months from the filing of the claim, whichever occurs sooner.

After the claim is filed, the hearing date is set at the Department of Commerce and Consumer Affairs (DCCA) offices. Recently, several plaintiff and defense lawyers met with Rod Maile, the administrator of the MCCP program. One of the major issues those of us representing claimants had was the time it took to obtain a hearing date. Maile has always been flexible and responsive with respect to changes to make the MCCP more efficient. As a result of our meeting, claimants' attorneys, if they use their offices for the hearing, can set the hearing at the time the claim letter is filed for a date not less than four months after the filing of the claim letter.

The MCCP consists of three persons, a doctor, an attorney and a chairperson, typically an attorney, but not required to be, according to Hawaii Revised Statutes H.R.S. § 671-11. The physician member of the panel is generally chosen from the same medical specialty as the health care provider named in the claim. If several physicians are named, the physician chosen is typically from a specialty that can best evaluate the case.

H.R.S. § 671 provides that anyone wishing to bring a lawsuit against a physician, osteopath D.O., podiatrist D.P.M., or hospital, licensed to practice or operate in the State of Hawaii, must first file a claim with the MCCP before filing a lawsuit. Thus claims against dentists including oral surgeons, chiropractors or psychologists do not require an MCCP filing. Nurses are covered by the MCCP because invariably they are an employee of a physician or hospital against whom a claim is brought and are covered via respondent superior. Rod Maile has informed me that at least one Circuit Court Judge in the First Circuit has ruled that a naturopath and a chiroprac-

tor may not be sued without first completing the MCCP process. My advice would be, particularly if the statute of limitations is approaching, to file concurrently with the MCCP and Circuit Court, if you have a claim against either a chiropractor or a naturopath.

Another positive outcome of the recent meeting between Rod Maile and several attorneys representing claimants and respondents, was the ability to name the panel chairperson for a particular case. If both or all of the parties agree and the person is an eligible panel chairperson (the Director of the DCCA will provide such a list), this can be accomplished by a written request to the Director of the DCCA.

The panel proceedings are not recorded and the outcome may not be used in any future litigation. The panel will include a suggested amount of damages, if the panel finds actionable negligence. Therefore, you must be prepared to present evidence on damages at the hearing. Although the panels have the right to split the hearing, entertaining the liability issues first, and then, if liability is found, entertaining evidence on damages, I have never, in my experience, had this happen. The panel's written decision finds either actionable negligence or no actionable negligence and, if there is actionable negligence, the panel will make a recommendation as to damages. No reasoning or basis for the decision is given. After the panel hearing, the panel members will often be willing to speak informally with you to discuss the basis for their decision. Occasionally, there will be a dissenting panel member, since only two out of three needs to agree.

According to H.R.S. § 671-15, the decision must be mailed to you 30 days following the completion of the hearing.

If you disagree with the MCCP panel, you may file suit. However, before filing in court, pursuant to H.R.S. § 671-16, you must file a written rejection of the panel's decision with the MCCP.

The MCCP, even though it proceeds in the same order as a trial, is an informal process and the rules of evidence are very loosely applied. Many panel hearings are concluded in half a day.

Both the claimant and health care provider or providers must attend the MCCP along with counsel, if any. If it is extremely onerous for my client to be present, I am usually granted permission to have my client excused. Generally, the panel requires claimants and health care providers to be present, even if they no longer live in Hawaii. The reasoning is that the purpose of the panel is conciliation and it is hard for this to occur if the parties are not present.

One side note, a Federal District Court of Hawaii decision in 1995, *Hum v. Dericks*,[2] has held that the MCCP requirement is procedural and does not apply to preclude malpractice actions brought in Federal Court on the basis of diversity jurisdiction where no MCCP claim has been filed.

Benefits versus Drawbacks of the MCCP

Although we never file until we have completely examined all the relevant medical records and have experts committed (unless the statute of limitations is imminent and it looks as though there is potentially a very good case), we invariably learn something new about the case during the panel process.

One of the most important reasons I take the process seriously is because the defense, to my knowledge without exception, takes it seriously. The two major carriers in this state are MIEC (Medical Insurance Exchange of California) and HAPI (Hawaii Association of Physicians Indemnification) and I know they feel the MCCP is a helpful process. I have found that a case is somewhat easier to resolve if there is a favorable panel result.

I know there are one or two people that represent claimants that do not put on a case at the MCCP. I am informed that they do this because they feel they are giving up too much information about their case without a sufficient quid pro quo. There may be strategic reasons for withholding certain parts of a claim, for instance, because the healthcare provider is not under oath, and it might be better to confront the healthcare provider with that information for the first time when the provider is under oath at his or her deposition. In general, I find that if I have a meritorious case, letting the defense know the basis of my claim at the panel is not a detriment, as I will usually then learn in advance of suit what their defenses are. In general, I believe if the panel is going to help, both sides should make an effort to present their case so that I, representing the claimant, can learn of any weaknesses which may not have been fully appreciated, and the defense can understand where they have problems in defending the case.

Although we will not go to the panel without the medical experts, except in the rare situation I mentioned earlier, there have been occasions when we have learned matters at the panel which have caused us to reconsider and not proceed further. I recall a case defended by Kenneth Robbins, Esq. a number of years ago where my clients' son was blinded at birth as a result of excessive oxygen. We had excellent experts telling us that the defense had breached the standard of care, but Mr. Robbins presented videotapes at the MCCP from two experts demonstrating that there were two legitimate schools of thought on how to handle this infant's problem. As a result of his presentation, we felt that our odds of prevailing were very slim, and we did not proceed past the MCCP.

If you do not present a case at the MCCP, the 1993 Legislature passed a bill giving the MCCP power to assess costs of the hearing, including the costs of expert witnesses and panel stipends, for such non-cooperation.[3] This assessment of costs may be appealed to the Circuit Court.

I think many of us representing plaintiffs have the concern that the doctor on the panel almost invariably, particularly if he or she is in the same field, knows the respondent doctor. Although there have been occasional decisions where I am afraid that friendship has maybe colored the outcome, I would say that more often than not, doctor members of the panel have tried to make an objective assessment of the medical facts. In almost all cases, the doctor's opinion will carry the day on whether there is or is not actionable negligence found. It is not easy for the panel chairpersons to obtain doctors to sit in the panels, but I have found that, if there is a physician on the panel that we feel will not be open-minded, that both the panel chairs and Rod Maile have been receptive to our concerns.

A legitimate concern for claimants regarding the panel is the time that is added to the process of bringing a malpractice action to finality. Against that delay has to be weighed how many cases are actually resolved at the panel (which I will cover later) and other factors such as costs. To bring even the more routine medical malpractice case through trial costs many tens of thousands of dollars. If you can have a case resolved at the panel level or learn

something at the panel level which leads you not to pursue the case further, the cost to your client, and in many cases, ultimately you as the claimant's attorney, is significantly reduced. I have also found that counsel for respondent doctors have told me that their doctors were totally against settlement and then, having been presented with the claimant's case at the MCCP, have agreed to authorize settlement. In almost all medical malpractice insurance contracts, although there are a few that I know do not require this, the doctor must consent to settlement. So, although you obviously will have to convince the doctor's lawyer that your case has merit, you will also need to have the doctor himself convinced of that fact.

I have found more recently that even though H.R.S. § 671-19 states that as part of the cooperation both parties should have authority to negotiate a settlement, the defense often does not come to the panel with that in mind. I would urge that counsel representing health care providers let their carriers know that they should arrive at the panel, in a case where they have exposure, prepared to discuss resolution. The attorneys representing the insurance carriers are experienced medical malpractice attorneys, and it would be a rare case where they were not able to fairly accurately evaluate their exposure before the start of the MCCP.

In summary, I believe the benefits of the MCCP far outweigh the two potential drawbacks, those two being the delay of cases and informing the defense of the theory of your case.

As stated earlier, the MCCP findings are confidential. I personally am in favor of this confidentiality requirement. Several years ago, I was asked to handle a case in Arizona where, at the time, the result of the finding of that panel, negligence or no negligence, was able to be used as the equivalent of an expert opinion. In my view, this turned what should have been a fact-finding and conciliation hearing into a mini trial with the attendant expense and trial-like posturing. In my view, the procedure as it then existed in Arizona (which is no longer the case), really was not a beneficial process, and added to delay of the case.

A Few thoughts on How to Make the MCCP Process Meaningful

Before you file your claim letter, you should: a) know the medical records; b) know your client's story; c) have spoken to a doctor or doctors in the appropriate medical fields – that you know will be candid in his or her opinions; and d) have obtained a written report or reports from the healthcare providers that you have retained. We often find that the story the client provides at the initial interview varies dramatically from what is contained in the medical records. Although we sometimes wonder about the accuracy of the medical records, we rarely find that we are able to prove that they were altered.

At the panel hearing itself, you should: a) establish the respondent's position as to the essential medical facts; b) have the respondent explain any differences in his or her opinions from what is contained in the medical records; c) have the respondent explain why any critical facts are omitted from the medical records; d) examine other critical healthcare personnel, such as nurses, to see if they differ on important issues from the respondent; e) have the respondent explain how his or her position can be supported in contrast to your own experts' opinions; and f) observe carefully the demeanor of the respondent – a likeable doctor can sometimes make the difference in whether an otherwise close case is won or lost.

MCCP Statistics

In 1999, there were 144 claims filed, which is very similar to the numbers filed in the preceding two years, although slightly less than the numbers filed in 1995 and 1996. Interestingly, if we go back 15 years, the number of cases that were filed in 1985 were essentially the same as filed last year. The 144 cases filed in 1999 involved 265 claimants and 375 respondents. No claimant filed more than one claim in 1999; however, the 375 respondents were not all different healthcare professionals and facilities. In fact, of the 375 healthcare professionals named, 26 of these claims were against one particular group of respondents.[4]

In 1999, the MCCP panels heard 129 cases that involved a total of 240 claimants and 489 respondents. In 20 of those cases, the claimants were prose. In only one of the cases in which the claimant did not have an attorney was there a finding of actionable negligence. The panels found actionable negligence on the part of all or some of the respondents in 47 of the 129 cases and rendered advisory determinations of damages raging from $25,000 to $3.2 million. In one case, the panel found actionable negligence but was not able to make a damages determination.[5]

In summary, as to the claims heard in 1999, actionable negligence was found in 33%, no actionable negligence in 61%, 2% were dismissed by the panel, and in cases with multiple respondents, at least one was found negligent and at least one non-negligent in 4% of cases. Thirty-seven claims were closed without hearings for various reasons such as withdrawal, settlement prior to hearing, dismissal by stipulation, termination, and lapse of the tolling period. Over the years, the percentage of cases in which negligence is found has varied roughly between 20% and 33%.[6] There has not been any dramatic change in the approximately 25 years since the MCCP has been in operation.

In my opinion, the statistics showing a two to one or as much as four to one ratio of losses versus wins by claimants at the MCCP is somewhat skewed. I know that some claimants' lawyers will go to the panel to give their client his or her "day in court." There is also the occasional claimant's attorney who does not present a case at the panel and, of course, that case will likely result in a finding of no negligence. Therefore, it has been my experience that even though local doctors, who will probably know the respondent doctor, sit on the panel, if the plaintiff presents his or her case fully with expert reports, the claimants will win as many cases as they lose.

In conclusion, the MCCP process is the law. I think we should utilize it, so as to provide the most possible benefit to clients.

1. 1976 Haw. Sess. L. Act 219; Hawaii Revised Statutes Chapter 671.
2. 162 F.R.D. 628 (D.C. Haw. 1995).
3. For examples, see H.R.S. § 671-19.
4. MCCP DCCA Annual Report to the 200 Legislature.
5. *Id.*
6. *Id.*

L. Richard Fried, Jr. practices law in Honolulu and specializes in representing plaintiffs in medical malpractice and other tort actions.

Medical School Hotline

Indigenous Ways of Healing Guinea Worm by the Sonninke Culture in Mauritania, West Africa

M. Scott Hickman, Medical Student II,
John A. Burns School of Medicine,
University of Hawaii,
and Deborah Miller, Documentary Film Maker,
Honolulu, Hawaii

Editor's Note by Dr. Satoru Izutsu, Editor of the Medical School Hotline: *Scott Hickman is a second year student at the John A. Burns School of Medicine. He was accepted for admission to the School in the Fall of 1998; at his request, he was granted a one-year "delayed matriculation" to participate in completing a film documentary on the Dracunculiasis medinesis in Mauritania, West Africa. He began his medical studies in 1999. This article is an example of the rich diversity that students bring with them in becoming physicians...*

Introduction

Dracunculiasis medinesis is a nematode that will hopefully soon share the distinction with smallpox of being completely eradicated from the face of the earth. In 1986 there were an estimated 3.2 million cases worldwide. After being targeted by the WHO, the Carter Center, and various other organizations, this number has now dropped 97% to only 78,557 cases in 1998.[1] Although its days may now be numbered, it has a very long and insidious past with humanity. The two to three foot worms have been found on the radiograph of a mummified Egyptian girl who died in 1000 B.C.,[2] and a treatment of the disease appears in *Papyrus Ebers* from 1550 B.C.[3] Some think that when Moses was fleeing Egypt, the "fiery serpents" that afflicted them on the Red Sea were Guinea worm. The ancient as well as modern way of healing someone afflicted with the disease, by wrapping the worm on a piece of wood and slowly pulling it out, has been hypothesized to be the symbol of modern medicine.[4] (Figures 1 & 2) Alexander the Great brought it with him to modern day India in 300 B.C., and it was the trans-Atlantic slave trade that brought it to the New World.[3] It received its popular name, Guinea worm, from European travelers who in the 17th century witnessed the disease on the Guinea Coast (West Africa).[5] Its scientific name, *Dracunculiasis medinesis*, or the "Little Dragon of Medina" comes from being considered historically the scourge of the Islamic pilgrimage.[6]

My first introduction to the disease came as a Peace Corps Volunteer in Mauritania, West Africa from 1993-1995. I had left the village I was living in, Hassi Chaggar, right before the rainy season with its typical health problems of malaria and diarrhea abundant. I returned one month later to find hundreds of people in the village who could not walk more than 10 feet at a time, with small white worms coming out of their skin and large secondary bacterial infections accompanying the worm. A few weeks after my arrival, the regional health director was giving me a ride in his air-condi-

Figure 1.— Persian surgeons extracting Guinea worm. This plate is from a monograph about Guinea worm written by a European physician in the 17th century. *"Exercitatio de Vena Medinesi, ad Mentem Ebnsinae sive de Dracunculis Veterum. Specimen Exhibens Novae Versionis ex Arabico, cum Commnetario Uberiori, cui Accedit Altera de Vermiculus Capillaribus Infantium. Augusta Vindelicorum. Imprensis Theophili Goebelli,"* Georg Hieronymus Welsch, 1674, 303. Plate taken from: Kean BH, Mott KE, and Adair RJ, *Tropical Medicine and Parasitology Clinical Investigations*, Vol. 2, 1978, Cornell University Press, New York, New York, 413-414.



Figure 2.— The modern symbol of medicine. One of many hypotheses to its origin is that it comes from the technique of wrapping Guinea worm on a stick to extract it.

tioned car (nice rides are prized by Peace Corps Volunteers more than pizza and ice cream in Nouakchott [pronounced "new ox shot"], the capital of Mauritania) and he suggested I do a survey of the whole village to get an accurate idea of how many had fallen to the disease. After three days of canvassing the village, I counted 247 out of 5000 people in Hassi Chaggar had been afflicted, the highest rate at the time in Mauritania. While walking in the stifling heat, (on my last trip there it got up to 138° F by 10:30 A.M. and I did not have the guts to check it at the hottest part of the day) I also saw how indigenous healers cured people with the disease. This technique was much different from what I and modern medicine were teaching them to do.

The Sonninke are mostly farmers in the Sahel region of West Africa, and the vast majority are Muslims. With only 50-100 miles separating them from the great sand dunes of the Sahara desert, food and water supplies are at a premium. Being able to work in the fields is critical for a family during the three to four months of the rainy season, for it is only during this time that millet, their staple crop, can be planted and harvested. Unfortunately, this is when Guinea worm strikes, afflicting the able-bodied so that they cannot farm. Children are dually affected, by being inflicted themselves or pulled out of school to work in the fields to take the place of a parent with the disease, causing a significant loss of time in school.[7] Guinea worm does not just affect the health of a community, but has an impact on the economic and nutritional status of a village as well.

Overview of the Life Cycle

Dracunculiasis is contracted by drinking water contaminated with small crustaceans *(Cyclops)* infected by the larval stage of the nematode. (No. 3 & 4 in Figure 6) After ingestion (No. 5 in Figure 6), the Guinea worm larvae penetrate through the stomach and small intestine and enter the retroperitoneal cavity where they mature. The female mates and develops, and then makes her way painlessly mainly to the lower extremities moving through connective and lymphatic tissue.[8] The female's full size is about 1 meter in length, (almost all of it uterus to carry its million of larvae) and 0.2 cm in diameter.[9] About one year after initially ingesting the larvae, when the rains come again, a very painful blister is formed by the female worm (No. 8 in Figure 6). Although the worm usually is found in the lower extremities, it can be found anywhere on the body such as the scalp, eyes, scrotum, vagina, spinal cord, etc. Multiple infections are common, and some people may contain from 15 to 30 worms.[6] When the blister is placed in water, which helps in reducing the pain, it bursts and the female deposits thousands of larvae into the water (No. 1 & 2 in Figure 6). The *Cyclops* again ingest the larvae, and the larval-infected *Cyclops* are then swallowed by humans continuing the life cycle.

Humans are the only host for Guinea worm, making its eradication feasible. Simply by filtering the water with a cloth will capture the *Cyclops* so that ingestion does not take place. Under the leadership of the regional health director and UNICEF and in conjunction with local leaders, my main job in the Peace Corps was teaching how the life cycle of the disease to the Sonninke and the preventative technique of filtration. Throughout the world this has been a very efficient means of prevention, and in 1998 when I was last in Mauritania there were only 12 cases of the disease in Hassi Chaggar.

Figure 3.— Carrying water to the house from a well in Hassi Chaggar. During the times when water is scarce, some must walk upwards of one mile several times each day from the well to their house carrying water on their head.



Figure 4.— Guinea worm coming out of the leg of a small child, with a string attached to the worm and the leg to keep it stable. The worm is about 10 cm out of the leg.



Figure 5.— A worm coming out just below the knee. This worm was one of five infecting this woman.



Indigenous Healing Methods

There is no cure for the infection, and most patients are incapacitated for 10 -11 weeks due to the pain and secondary infections.[1] (Figure 7) The way taught to the villagers by the local health authorities and myself involved wrapping the worm around a matchstick and pulling it out about 2-3 cm per day while keeping the wound clean. The Sonninke claim to have developed a way of turning this long time of disability to less than one week, so that they can quickly be out in the fields working. It was to research this method that the author and Deborah Miller, a documentary film maker now based Honolulu, went to Mauritania in 1998 to make a film on the indigenous ways of curing the disease.

The process begins by inducing a bacterial infection by making 10-30 superficial cuts around the general vicinity where the worm is found. (Figure 8) Sometimes the lesion formed by the worm itself produces such an infection so that this step is not needed. The wound is initially left open, and then covered with leaves such as from the Neem tree. Once there is a sufficient amount of infection, pus, and edema, a hot-metal poker is used to puncture the wound while 5-6 people hold the patient. (Figures 9 & 10) The patient is then encouraged to immediately get up and walk around. Once the pus drains from the wound, the worm is more easily pulled out, probably by losing its adhesions with the connective tissue destroyed by the bacterial infection.

We followed one patient who had the procedure done in the above figures. She was about an 18 year old married woman with 5 worms in her lower extremities. For weeks before she underwent the procedure, she could walk no more than 20 feet at a time and was confined to her house due to her severe pain, especially due to an infection in her left foot. Under the urging of the relatives in her compound, she visited an indigenous healer, or *jarandanna*, and underwent the procedure. She stood up almost immediately after being lanced on her foot in obvious severe pain but walked home. The next day she appeared to be in much better spirits and in much less pain, with most of the original edema gone but the worm still in place. On the second day after the procedure we went back to interview her again, but her relatives told us she had gone to the fields to work and the worm was gone.

I became interested in the Sonninke way of healing Guinea worm because it has been developed to enable one to go back to work more quickly than what Western medicine could do in such a place. It was incredibly horrific to see this done to someone, as well as appearing very dangerous. But, it was indeed just as amazing when these very same people who before could take no more than a couple steps before visiting the healer were out farming only 2 days afterwards. Modern medicine has made incredible strides to help the health of humanity, but here a local means of healing was preferred by many in the village, not only for its economic benefit of allowing people to go back to work quicker, but for its thereaupetic effects as well.

The healers understand the danger of systemic infections, contractures, and frozen joints, and have told me of deaths that occurred due to secondary infections by people who did not wish to undergo the procedure. Their lancing they say is a quick way of finally ending a Guinea worm infection as well as draining the secondary infection. The disease was often explained to me analogous to a fight. If you did nothing, sat around in pain, and were afraid of undergoing the procedure, the worm and its infection would eat you and get the best of you and your family. But if you were brave and lanced it and immediately walked around, you could beat the worm and go back to work. While sipping tea one night in Hassi

Figure 6.— The Life Cycle of Guinea Worm. From reference 6.

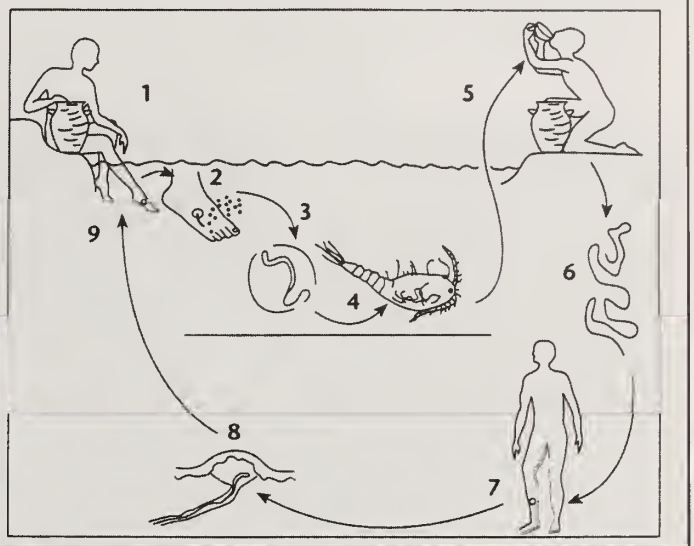


Figure 7.— Using a cane to walk due to the pain of a Guinea worm infection.



Figure 8.— Cutting the skin in the area of the worm. The worm at this point can be palpated under the skin but has not yet bore its way through. Cutting will induce a secondary bacterial infection that probably breaks down connective tissues that the worm normally adheres to.



Figure 9.— No anesthetic is used when lancing the infected area with a red-hot metal poker, so the patient needs to be held down during the process. Lancing the infected area will drain the wound, which the Sonninke claim makes it easier for the worm to come out.



Figure 10.— Lancing the infected area. The poker is in the left hand of the man in the striped shirt, with the coals seen under his left arm. The Guinea worm infection is on the left foot.



Chaggar under the African stars and enjoying the cool of the evening, a Sonninke friend of mine told me that both the available Western and Sonninke methods of extracting the worm were inadequate. One was too slow and the other too dangerous, and both were extremely painful. It makes the final eradication of Guinea worm all that more welcome.

References

1. Hopkins DR, Ruiz-Tiben E, Ruebush K, Diallo N, Agle A, Withers Jr, PC, Dracunculiasis eradication: delayed, not denied. *Am. J. Trop. Med. Hyg.*, 2000; 62 (2) 163-68.
2. Cole J, Buried treasure. *British Medical Journal.* December 1, 1979; 1412-14.
3. Adamson PB, Dracontiasis in antiquity. *Medical History.* 1988; 32; 204-9.
4. Pejic RN, The symbol of medicine: Aesculapius or Caduceus? *JAMA.*1996; Vol 275, No. 16; 1232.
5. Kiple FK editor, *The Cambridge History of Human Disease.* Cambridge University Press, New York, NY. 1993, 687-9.
6. Hunter JM, An introduction to Guinea worm on the eve of its departure: Dracunculiasis transmission, health effects, ecology and control. *Soc. Sci. Med.* 1996; Vol. 43, No. 9; 1399-425.
7. Hours M, Carncross S, Long-term disability due to Guinea worm disease. *Trans. R. Soc. Trop. Med. Hyg.* 1994; 88; 559-60.
8. Cook GC, *Manson's Tropical Diseases,* 20th edition, 1996, Bath Press, Avon, Great Britain, 1358-68.
9. Mandell GL, Bennett JE, Dolin R, *Principles and Practice of Infectious Diseases,* 5th edition, 2000, Churchill Livingston, Philadelphia, Pennsylvania, 2945.



HAWAII POISON CENTER

OAHU: 941-4411

NEIGHBOR ISLANDS TOLL-FREE:

1-800-362-3585

Free Hotline 24 Hours a Day.

POISON CENTER TIPS

- Keep the number of the Hawaii Poison Center on or near your telephone.
- If you suspect a poisoning, do not wait for signs and symptoms to develop. Call the Hawaii Poison Center immediately.
- Always keep Ipecac Syrup in your home. (This is used to make a person vomit in certain types of poisoning.) **Do not use Ipecac Syrup unless advised by the Hawaii Poison Center.**
- Store all medicines, chemicals, and household products out of reach and out of sight, preferably locked up.
- A good rule to teach children is to "always ask first" before eating or drinking anything—don't touch, don't smell, don't taste.

Donate to help us save lives.

Mail checks, payable to:

Hawaii Poison Center

1319 Punahou Street, Honolulu, HI 96826

People know Pueblo for its...



Snazzy Web Site?
(www.pueblo.gsa.gov)



Cool Consumer Information Catalog?



Easy-To-Remember Phone Number? (1-888-8 PUEBLO)



Famous Hot Salsa?

It's not just the salsa. In Pueblo, the free information is also hot. You can get it by dipping into the Consumer Information Center web site, www.pueblo.gsa.gov. Or calling toll-free 1-888-8 PUEBLO (1-888-878-3256) to order the free Catalog. Either way, you can spice up your life with ready-to-use government information on topics like investing for retirement, getting federal benefits, raising healthy children and buying surplus government property.

So remember, if you want information, mild, chunky or otherwise, Pueblo is all you need to know. Sorry, salsa not available through the Consumer Information Catalog or web site.

A public service of this publication and the Consumer Information Center of the U.S. General Services Administration.

Box jellyfish (*Carybdea alata*) in Waikiki:

Their influx cycle plus the analgesic effect of hot and cold packs on their stings to swimmers at the beach: A randomized, placebo-controlled, clinical trial.

Craig S. Thomas MD[+], Susan A. Scott RN, BA[++], Daniel J. Galanis PhD[+++], and Ralph S. Goto BA[++++]

Abstract

The study measured the analgesic effect of hot and cold packs on box jellyfish (Carybdea alata) stings to Waikiki swimmers at the beach. Analysis of data showed a minimal trend toward pain relief 10 minutes after the application of hot packs, particularly when the initial pain was mild to moderate. Cold packs showed no clinically significant relief of pain, compared to the control. Date tracking shows that most box jellyfish appear in Waikiki waters on the 9th or 10th day after the full moon.

Introduction

Box jellyfish (*Carybdea* species) annually inflict hundreds of painful stings to Hawaii ocean-goers.[1] On July 29, 1997, over 800 people were stung at Waikiki Beach alone.[2] Worldwide, thousands more people are stung annually by these and other box jellyfish species. Box jellyfish belong to the jellyfish class Cubomedusae, found only in tropical and subtropical waters. Cubomedusae have transparent, almost perfectly square bells. Their bottom edges are straight rather than scalloped, and tentacles hang from each of the bell's four corners.

In the middle of each of the four, flat sides of a box jellyfish bell lay the animal's sensory organs including elaborate, well-developed eyes. In darkness, a box jellyfish can detect light from a match 4 or 5 feet away and will swim toward it. These creatures appear to be sensitive to bright sunlight and most apparently retreat to deep water at midday. Because of this, most stings occur to swimmers in the morning.

Box jellyfish are strong, fast swimmers, some cruising up to about 2 miles per hour. These creatures feed mainly on shrimp and fish, stinging them with cells called nematocysts, abundant on the trailing tentacles. When a human comes in contact with these nematocysts, they sting exposed skin.

Two kinds of stinging, but non-lethal, box jellyfish appear periodically in Hawaii's bays and shorelines. These are *Carybdea alata*, about 3 to 4 inches high and about 2 inches wide, and *Carybdea rastoni*, about 1 inch square. Both have pinkish tentacles trailing from the four corners of the square. The tentacles of the larger species can be up to 2.5 feet long.

Correspondence to:
Craig S. Thomas MD and
Susan A. Scott RN, BA
68-151 Au St., #112
Waialua, HI 96791

The box jellyfish called sea wasps (*Chironex fleckeri*) are infamous in Australia and surrounding areas for their sometimes-fatal stings. This species does not inhabit Hawaiian waters.

No confirmed deaths have occurred in Hawaii from box jellyfish stings but the pain they inflict can be severe. The pain and marks from box jellyfish stings is nearly always self-limited, usually disappearing with no treatment from 20 minutes to one day. Some victims suffer persistent pain and/or recurring rash.

Therapies to minimize box jellyfish pain have not been studied in controlled, clinical trials. Some remedies, such as application of ice packs or heat in the form of hot showers or hot water soaks are common at home and in Hawaii's emergency rooms but are unproven. Additionally, chemical hot packs and chemical cold packs are a significant expense to the City and County of Honolulu since lifeguards sometimes use these to treat the pain of jellyfish stings at the beach.

This study was undertaken to determine whether applying hot or cold packs at the beach significantly relieves pain from box jellyfish (*Carybdea alata*) stings.

Box jellyfish have been in Hawaii at least since 1906 and a swarm of *Carybdea alata* was reported appearing on Waikiki Beach in June, 1951.[3] According to Honolulu City and County lifeguards, however, box jellyfish began occurring in Waikiki waters and on Waikiki beaches on a regular basis and in large numbers in the late 1980s. The first of these influxes was noted in December of 1988, followed by influxes in April, May, June and July of 1989.[4] In May of 1989, daily Waikiki swimmer Minoru Yoneshige noticed that box jellyfish seemed to be appearing in Waikiki waters on a regular basis. He recorded influx dates for 4 years and discovered that box jellyfish usually appeared there two days after the last quarter moon. He notified one of the authors (S.S.) and lifeguards of his findings.

Lifeguards also began recording influx dates and counting individual jellyfish found in the area of Waikiki Beach near tower 2C, a place where box jellyfish were often highly concentrated. From their unpublished data, it was confirmed that the highest influxes occurred on the 9th and 10th days after the full moon (another way of saying two days after the last quarter moon). The authors believe that compiling and publishing the dates of box jellyfish influxes in Waikiki over the last three years is of value to lifeguards, heath care workers and the public in general since box jellyfish sometimes cause painful and fearful experiences for people recreating in Waikiki waters.

Methods

This study is one part of an ongoing, larger study examining the efficacy of different temperatures and solutions in treating the pain of box jellyfish and Portuguese man-of-war stings in Hawaii. The University of Hawaii's human subjects committee has approved all portions of this on-going study.

The main study sites for applying hot and cold packs to box jellyfish stings were at Waikiki Beach at the lifeguard towers marked 2C and 2D. These sites were chosen for their high number of box jellyfish sting incidents compared to other leeward beaches. This increased incidence is likely due to the trapping of box jellyfish inside nearby concrete breakwaters.

The study was conducted from January 1997 through December 1999. During this time, any adult or child who came to the lifeguard tower complaining of a sting was assessed immediately for the possible need of ambulance assistance. Criteria for such assistance were respiratory distress, altered consciousness, uncontrollable pain, widespread rash, stings to eyes or victim request. Five victims needed ambulance transport. Two had a hot pack applied to their stings, two had a cold pack applied and one had a control pack applied, all before ambulance arrival.

Those victims not requiring ambulance assistance, and who likely had box jellyfish stings as indicated by the lunar cycle and wind direction, had their sting areas immediately doused with vinegar. Vinegar is currently the recommended method of neutralizing undischarged nematocysts in box jellyfish stings.[5] This treatment is not purported to relieve pain, but prevents additional stings. Following this dousing, a worker applied one of three temperature variants to the sting: a chemical hot pack, a chemical cold pack or an air temperature pack (control). The worker selected the type of pack applied in a random manner by reaching into a box containing an approximately equal number of the three types of packs and choosing the first one at hand. This method of providing randomized treatment is not flawless but proved a practical method of randomization at the beach. Also, blinding the researcher as to whether he or she was using hot, cold or air-temperature packs was difficult since as soon as the pack was activated, its temperature change, or lack thereof, was noticeable instantly by touch.

The chemical hot packs (Kwik-Heat) reached a maximum temperature of 110 degrees F. soon after being activated by squeezing the bag. The cold packs (Kwik-Kold) soon reached a minimum temperature of 42 degrees after being activated in the same manner. Control packs were depleted hot or cold packs. At 0 (immediately after the vinegar dousing), 5, 10 and 15 minutes, victims 7 years of age and older made a single mark, or told the field researcher where to make a mark, through a standard 100-mm visual analog scale (VAS), with 0 being no pain and 100 being severe pain.

Results

Sample and Data Analysis

The dataset contained information on 133 individuals. However, two (both in the cold group) dropped out before the vinegar dousing, and three more (one in the hot group, two in the cold group) dropped out before the 5-minute pain score was recorded. Another participant had a final pain score of 0 after the vinegar dousing. The sample size for the analysis of pain score at 5 minutes after the vinegar dousing is therefore 127. More serious sample attrition begins after the 5-minute mark. Only 100 participants gave complete data at 10 minutes, and only 43 at 15 minutes. Thus, the most reliable results are those from the pain score at 5 minutes. After that, two different analytic methods were used, one which considered only the data actually collected (method 1), and another method in which missing pain scores were imputed with the last pain score recorded (method 2). Both methods give results that are limited in comparison to the results from the pain score at 5 minutes. The former method does not take into account any treatment effect on dropping out and the latter relies heavily on imputed pain scores.

The pain scores were analyzed as both continuous and binary outcomes. Graphical analyses indicated the pain scores were somewhat skewed, so a square root transformation was used for the analysis of covariance. The results were similar to those with the untransformed data, however, so the latter are presented here for ease of interpretation. Nonparametric statistical tests also corroborated the results obtained with the untransformed data. The analysis of covariance described the inter-treatment differences in the mean pain scores at 0, 5, 10 and 15 minutes, with statistical control for the pain score at 0 minutes for the last 3 outcomes. A binary outcome was also constructed, depending on whether the participant experienced complete cessation of pain or not over the 15 minute testing period. However, only 7 of the 127 participants reported a final pain score of "0", 5 in the hot group and 2 in the cold group. (Three other participants reported 0 after 5 minutes, but re-elevated pain scores after 10 and 15 minutes.) Since there were no participants in the neutral group (the reference group) who reported a final score of 0, the definition of cessation of pain was widened to include a final pain score of 10. A logistical regression model was used to analyze the odds of the cessation of pain across the treatment groups, while controlling for initial (after vinegar dousing) levels of pain.

Records of the dates of appearance and box jellyfish counts at Waikiki Beach near lifeguard tower 2C since 1998 were collected and recorded in tables and graphs.

Estimation of pain scores at 5, 10 and 15 minutes by treatment group.

Results are summarized in the following table, including both of the above-described analytic techniques for pain scores at 10 and 15 minutes after vinegar dousing. The basic model was: pain score at 5-, 10- and 15-minute intervals (after vinegar dousing) = intercept + baseline pain score (after vinegar dousing) + treatment effect.

At 5 minutes, both the cold and hot treatment groups had significantly lower average pain scores than the neutral group. The estimated difference was approximately 5 points for the cold group and 6 points for the hot group. This is shown graphically in the figure below (Graph 1). There is some suggestion of an interaction with the effect of the hot group in that the difference between the hot and neutral group was greater among those participants with lower initial pain scores, compared to those with higher initial pain scores. This interaction was not statistically significant, however. The decrement associated with the cold group was fairly constant across the range of initial pain scores (no interaction).

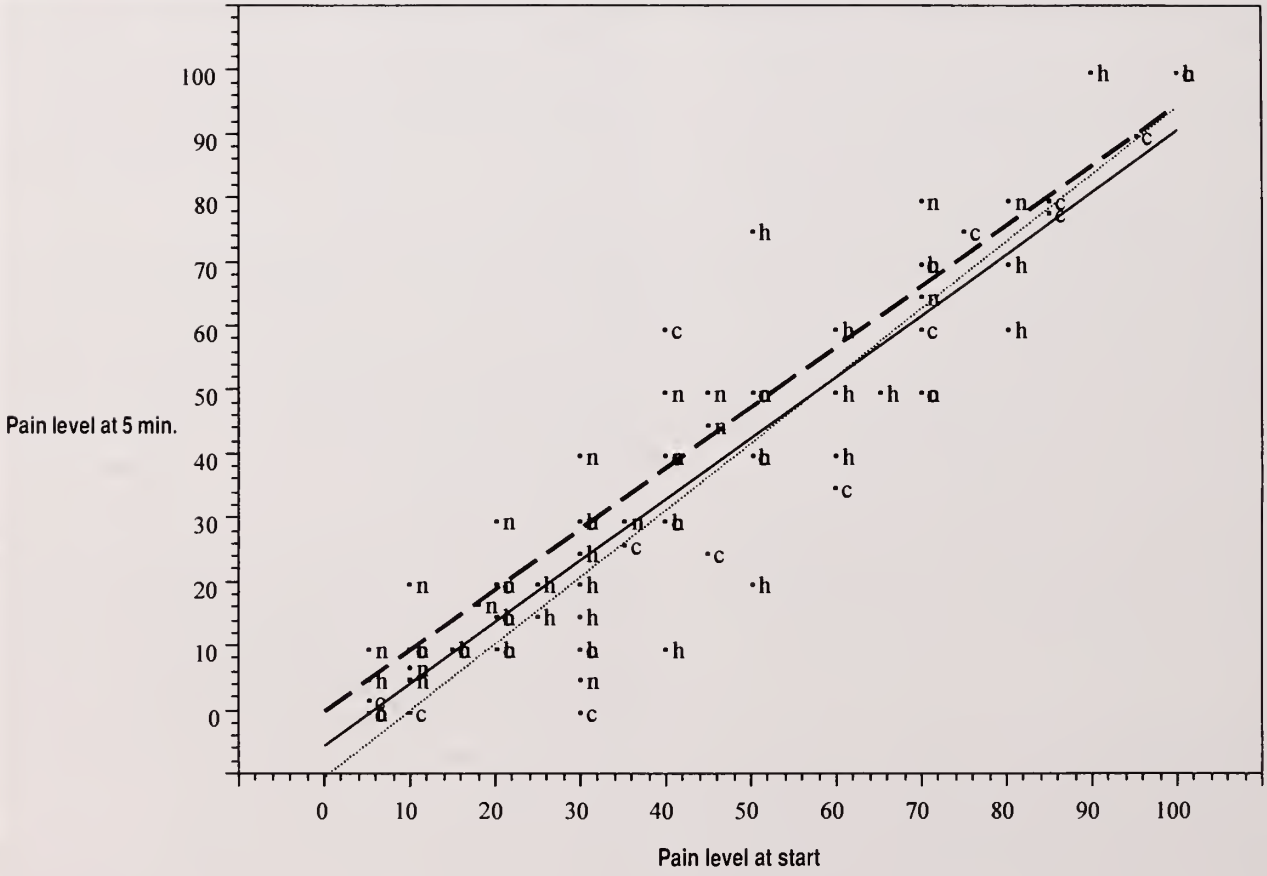
At 10 minutes, participants in the hot treatment group had significantly lower pain scores compared to the cold and neutral groups, between which there were no longer differences (Table 1). This was true for both methods 1 and 2.

Table 1. — Estimated* average pain scores, by 5-minute intervals and treatment group.

		Method 1[1]					Method 2[2]	
Group	time:	0 min.	5 min.	10 min.	15 min.		10 min.	15 min.
Cold	n	42	42	31	17		42	42
	pain score	38.3[a]	32.8[a]	36.2[a]	45.0[a]		33.2[a]	33.9[a]
	standard error of pain score	3.9	1.4		2.4	4.3	2.0	2.2
Hot	n	44	44	35	12		44	44
	pain score	42.3[a]	31.3[a]	27.5[b]	34.1[a]		26.0[b]	23.8[b]
	standard error of pain score	3.6	1.4		2.3	5.2	2.0	2.2
Neutral	n	41	41	34	14		41	41
	pain score	38.6[a]	37.7[b]	38.2[a]	37.3[a]		35.0[a]	33.4[a]
	standard error of pain score	3.9	1.4	2.3	4.8		2.0	2.3

*Estimates at 5, 10 and 15 minutes are adjusted for pain level after vinegar dousing (0 minutes).
[1]Method 1 utilized only non-missing data in estimation of average pain scores.
[2]Method 2 imputed missing values after 5 minutes, using the last recorded pain level for all subsequent missing values. (Note that the sample sizes for each treatment group remain constant in Method 2.)
Significance tests between treatment groups (within 5 minute intervals): groups with same letter are not significantly different ($p \geq 0.05$).

Graph 1. — Prediction of pain at 5 minutes by treatment group.



(Fitted lines: Neutral group indicated by dashed line, hot group by dotted line, and cold group by solid line.)
(Data points: Neutral group indicated by "n", hot group by "h", and cold group by "c".)

Prediction of the cessation of pain by treatment group.
The proportion of participants who experienced the cessation of pain within the study period was highest in the hot treatment group (41%) and lowest in the neutral group (29%). After adjustment for initial pain scores, participants in the hot group were estimated to be 5 times more likely to experience cessation of pain, compared to those in the neutral group. While this estimate was statistically significant (p=0.02), note the wide confidence interval, ranging from roughly 1 to 23. In fact, exploratory data analysis indicated the odds estimate was substantially decreased by artificially changing the status of 1 or 2 participants in the hot group. There was no statistical difference in the odds of pain cessation between those in the cold group and the neutral group (p=0.4).

Table 2.—Odds of cessation of pain*, by treatment group.

Treatment group	Cessation of pain? yes (%)	no	Odds ratio (95% confidence interval)
cold	14 (33%)	28	0.5 (0.1 - 2.1)
hot	18 (41%)	26	5.2 (1.3 - 22.8)
neutral (reference)	12 (29%)	29	1.0

*Cessation of pain is defined as a final pain score of 10 or less. All estimates are adjusted for initial pain scores.

Box jellyfish appeared on Waikiki Beach at tower 2C nearly always between the 8th day and 12th day after the full moon. In the 1998 graph, a 13th day column was added because of the unusually high influx of jellyfish on the 12th day in March. The counts near tower 2C on all other dates were zero or near zero. Analysis of the dates of box jellyfish influxes in Waikiki for the past three years confirms that these jellyfish most often appear on and near the beach in the highest numbers on the 9th and 10th days after a full moon.

Recent research suggests that the synchronous arrivals of box jellyfish in Waikiki are monthly spawning aggregations. Box jellyfish start to arrive on the beaches of Waikiki approximately one hour before the high tide on the ninth and tenth days after the full moon. The first individuals to arrive are usually mature spawning males. Approximately one hour later, mature spawning females arrive.[6] It is unknown why this occurs only on the leeward shore of Oahu.

Discussion

Our data analysis shows that after 5 minutes of holding packs on a box jellyfish sting, both the cold and hot treatment groups had lower pain scores (less pain) on average than the control group: cold was approximately 5 points lower than neutral; hot approximately 6 points lower. It is doubtful, however, that such small differences are clinically significant. One study examining the significance of this visual analog scale (VAS) model reports that in acute traumatic pain in an emergency department, less than a 13-mm change in pain severity, although statistically significant, may have no clinical importance.[7] Another emergency department study on VAS pain scores found the minimum clinically significant difference in VAS pain scores to be 9 mm.[8] From these studies the authors conclude that the 5 or 6 point VAS difference in hot and cold pack treatment at 5 minutes is not clinically significant.

At 10 minutes, there is neither a statistically nor clinically significant difference between the cold packs and neutral packs (in both methods 1 and 2), thus in this study, cold packs were ineffective in relieving jellyfish sting pain 10 minutes after application.

At 10 minutes, hot pack victims are lower (less pain) than the control in both statistical methods. In Method 1, the decrease was approximately 11 points; Method 2, approximately 9 points. This difference is clinically significant according to one VAS study and not clinically significant according to the other. In Method 1, the average pain score estimates in the cold and hot groups increase at the 15-minute mark, compared to the 5-minute mark. (Actually at 10 minutes in the case of the cold group.) There are at least three possible explanations for this. One is that there is less potential for late pain relief among those in the hot and cold groups, since they experienced a greater decrease of pain earlier. Another possibility is that people in the hot and cold treatment groups are dropping out earlier than those in the control group because of lessened pain. A third option is that both the hot and cold packs used tended to lose their maximum temperatures after 10 to 15 minutes, therefore, their efficacy diminished with time.

One uncontrolled and possibly significant variable in this study was the time elapsed between the time the victim was stung and the time he or she sought help. Often, victims continued surfing or swimming for a while, took freshwater showers at the beach or treated the stings with their own remedies before coming to the lifeguard. Considering this is a self-limited affliction, it's possible that this unmeasured variable skewed study results.

Some clinicians in Hawaii's emergency rooms instruct their box jellyfish victims to take hot showers. Anecdotal reports indicate that victims who do this say they feel an immediate relief of pain. The pain of jellyfish stings, however, is self-limited, often disappearing on its own from 20 minutes to a day, thus any intervention often appears to work. The analgesic effect of hot showers should be studied with a control, examining the effects of fresh water, water pressure from the showerhead, water temperature and elapsed time. Similarly, ice packs used at home or in the emergency room need a controlled clinical trial to examine their effectiveness as do cool fresh water showers at the beach. Such studies, however, are extremely difficult to conduct. Studying late interventions is problematic in self-limited injuries plus few victims (fortunately) are seen in emergency rooms for jellyfish stings in Hawaii.

Based on the findings of this study, and the results of other studies regarding clinical significance in VAS scores, the authors conclude that there is a trend toward relief of box jellyfish pain with hot packs 10 minutes after application particularly if the initial pain was mild to moderate. The clinical significance of this trend, however, is borderline and thus makes it unlikely that noticeable relief of pain from Hawaii's box jellyfish stings is achieved with the application of hot packs at the beach. Applying cold packs at the beach does not appear to be effective in relieving the pain of these box jellyfish stings. Because of these results, the authors recommend that all box jellyfish stings be sprayed liberally with vinegar, but that neither hot nor cold packs be applied routinely.

Because box jellyfish influxes occur with relative regularity, lifeguards should continue to monitor Waikiki beaches in the early mornings on the 8th through 13th, and particularly on the 9th and 10th, days after the full moon and post jellyfish warnings to swimmers as warranted.

Graph 2

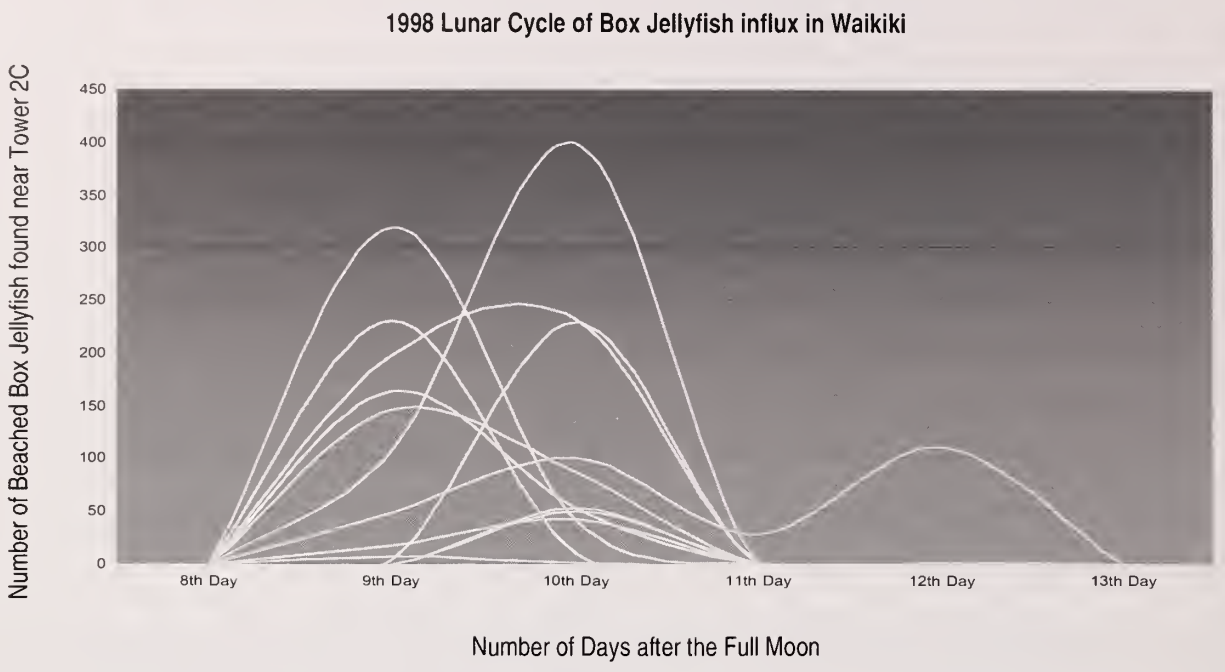


Table 3

Month	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13
January	0	18	43	0	0	0
February	0	147	88	0	2	0
March	0	49	100	28	111	0
April	0	108	400	1	1	0
May	0	165	53	0	1	0
June	0	4	230	0	0	0
July	0	0	50	1	0	0
August	0	0	54	0	0	0
September	0	231	10	0	0	0
October	0	320	42	0	0	0
November	0	198	232	1	0	0
December	0	7	1	0	0	0

Graph 3

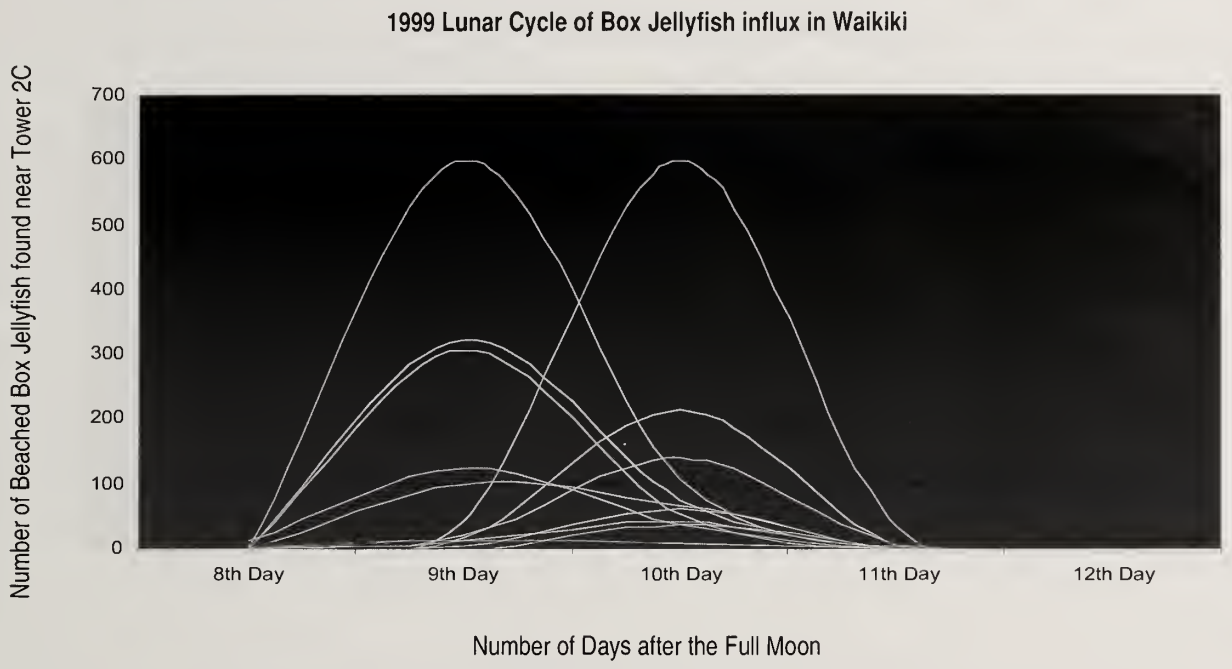


Table 4

Month	Day 8	Day 9	Day 10	Day 11	Day 12
January	0	20	141	7	1
February	2	324	76	0	0
March	0	45	600	36	0
April	0	14	43	0	0
May	0	100	70	1	0
June	0	1	39	4	0
July	1	18	216	4	0
August	0	16	11	0	0
September	0	5	61	3	0
October	13	127	38	0	0
November	0	307	54	0	0
December	1	600	108	0	0

Graph 4

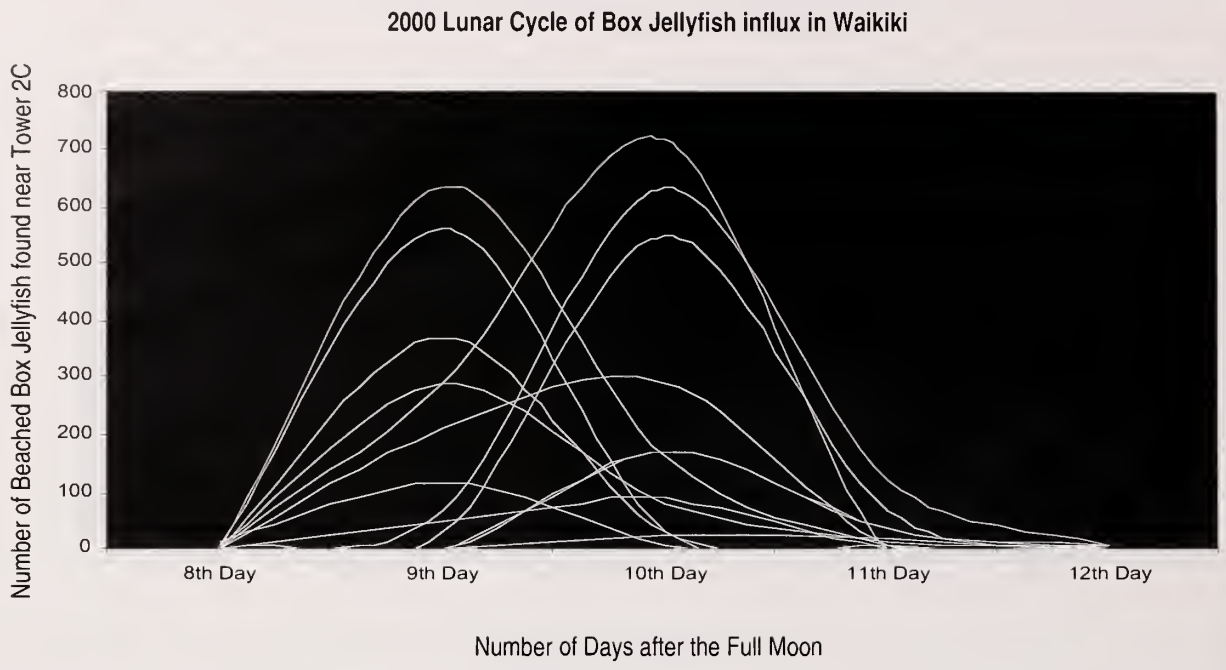


Table 5

Month	8th Day	9th Day	10th Day	11th Day	12th Day
Dec/Jan	15	117	8	1	5
January	7	288	79	14	5
February	7	560	31	5	0
March	0	210	292	8	0
April	0	372	28	0	0
May	0	3	171	36	7
June	0	0	22	18	0
July	3	29	550	67	1
August	0	1	168	35	2
September	0	47	87	3	1
October	0	67	630	122	5
November	0	634	162	9	3
December	0	0	22	18	0

The authors stress that their recommendations do not pertain to Portuguese man-of wars (*Physalia physalis* and *Physalia utriculus*), two other stinging marine species that also sometimes plague Hawaii's ocean goers. Portuguese man-of–wars' nematocysts (stinging cells) are different from one another and from those of box jellyfish, and therefore, need to be studied separately.[9]

Acknowledgements

The authors gratefully acknowledge Honolulu lifeguard Landy Blair for his outstanding contributions to this study. For years, Mr. Blair worked hard collecting data, collaborating with researchers and helping beachgoers cope with painful box jellyfish stings. Without him, this study would not have been possible.

The authors thank Michele Miller for creating the lunar tables and graphs and for her computer expertise in helping prepare this manuscript.

Authors

[+]*Craig S. Thomas, M.D.*
President, Hawaii Emergency Physicians Associated, Inc. (HEPA)
Clinical Faculty Member, Department of Family Practice,
John A. Burns School of Medicine, University of Hawaii,
[++]*Susan A. Scott, R.N., B.A.*
Marine Science Columnist
Honolulu Star-Bulletin
[+++]*Daniel J. Galanis, Ph.D*
Epidemiologist, Injury Prevention and Control Program
Hawaii Department of Health
[++++]*Ralph S. Goto, B.A.*
Ocean Safety Administrator, Department of Emergency Services
City and County of Honolulu

References

1. Thomas, Craig and Susan Scott. 1997. *All Stings Considered: First Aid and Medical Treatment of Hawaii's Marine Injuries.* Honolulu: University of Hawaii Press. p.19.
2. Kriefels, Susan, 1997. "Tourists takes stings in stride." *Honolulu Star-Bulletin*, July 30, 1997. http://starbulletin.com/97/07/30/news/story3.html
3. Devaney, Dennis M. and Lucius G. Eldredge, ed. 1977. *Reef and Shore Fauna of Hawaii, Section 1: Protozoa through Ctenophora.* Bishop Museum Press, Honolulu.
4. Hopper, Carol 1989. *Kilo I'a* (Waikiki Aquarium Newsletter), Issue 74, Sept./Oct.
5. Fenner, Peter J. and John A. Williamson. 1996. "Worldwide deaths and severe envenomation from jellyfish stings." *Medical Journal of Australia* 165 (December): 658-661.
6. Personal communication, January, 2001, Jamie Seymour, PhD, Senior Lecturer, Department of Zoology and Tropical Ecology, James Cook University, Cairns Campus.
7. Todd, Knox H. et al. 1996. "Clinical significance of reported changes in pain severity." *Annals of Emergency Medicine* 27 (April): 485-89.
8. Kelly, A.M. 1998. "Does the clinically significant difference in visual analog scale pain scores vary with gender, age, or cause of pain?" *Academy of Emergency Medicine* 5 (Nov): 1086-90.
9. Fenner, Peter J., et al. 1993. "First aid treatment of jellyfish stings in Australia." *Medical Journal of Australia* 158 (April): 498-501.

Schering/Key Pharmaceutical

Claritin-D® 12 Hour
(5 mg loratadine/120 mg pseudoephedrine sulfate, USP)
Extended Release Tablets

Claritin-D® 24 Hour
(10 mg loratadine/240 mg pseudoephedrine sulfate, USP)
Extended Release Tablets

Claritin® RediTabs®
10 mg (loratadine rapidly-disintegrating tablets)

Claritin® Syrup
(loratadine) 10 mg per 10 mL

Once-a-day nasonex (mometasone furoate monohydrate) Nasal Spray, 50 mcg

Claritin® 10 mg TABLETS (loratadine)

Tequin® gatifloxacin 400 mg tablets/injection

Velvet Agena-Chee
Senior Sales Representative
Voice Mail (800) 782-2347
Box 3858

Donn keoki Arizumi
Pharmaceutical Representative
Voice Mail (800) 544-5420
Box 8058

Shawn Brady
Sales Representative
Telephone (808) 387-1409
Voice Mail (800) 554-5420
Box 1342
FAX (808) 373-1772
E-Mail shawn.brady@spcorp.com

Mark Buquoi
Sales Representative
Telephone (808) 384-3862
Voice Mail (800) 544-5420
Box 9795
FAX (808) 841-6105

Dennis M. Hamamura
Senior Pharmaceutical Rep.
Telephone (808) 671-0225
Voice Mail (800) 544-5420
Box 8774
FAX (808) 671-0817

Carol K. Honda
Sales Representative
Voice Mail (800) 554-5420
Box 8322
FAX (808) 593-1776

Rachelle Hyde
Sales Representative
District Trainer
Voice Mail (800) 782-2347
Box 3861

Caroline Perry
Sales Representative
Voice Mail (800) 554-5420
Box 1274
E-Mail Caroline.perry@spcorp.com

Brian Souza
District Account Representative
Telephone (808) 394-9475
Voice Mail (800) 554-5420
Box 6811
FAX (808) 394-9475
E-Mail brian.souza@spcorp.com

Case Report
Pseudo Pseudothrombocytopenia

Robert T.S. Jim MD

Abstract

An 82 year old Caucasian male minister presented with thrombocytopenia and platelet clumping on the blood smear thought to have pseudo thrombocytopenia. However, the platelet clumping was due to delay in making the blood smear rarther than clumping due to EDTA anticoagulant. This factitious or artificial platelet clumping (pseudo pseudothrombocytopenia) should not be confused with pseudo thrombocytopenia.

An 82 year old Caucasian male minister was seen for thrombocytopenia (platelet count 85,000 cmm. The rest of the Complete Blood Count was normal). His past history revealed essential hypertension and coronary artery bypass X 4. His medications taken included Quinapril HC1, Cimetidine, Procainamide HC1 and ASA.

Examination of the blood smear revealed numerous clumps of platelets. Pseudothrombocytopenia (PT) or drug induced thrombocytopenia was considered. A repeat platelet count with EDTA anticoagulant revealed a count of 101,000 cmm and with citrate anticoagulant a count of 101,000 cmm.

Blood smears from the EDTA and citrate anticoagulant blood revealed no platelet clumping.

A blood smear made from the patient's freshly drawn venipuncture revealed no platelet clumping.

A blood smear made from the patient after allowing the drop on the slide to sit 3 minutes delay revealed striking platelet clumping.

Discussion

Pseudothrombocytopenia (PT) is a laboratory-induced artifact where an unknown serum factor in normal or ill patients reacts with the EDTA anticoagulant used to collect blood resulting in platelet clumping.[1] Spurious low platelet counts by electronic Coulter machine results. Examination of the blood EDTA collected blood reveals clumping of platelets. If citrate or oxalate is substituted for EDTA, platelet clumping is not seen and normal platelet counts are seen.

In this case report, platelet clumping was not seen with the EDTA anticoagulant, as would be found in PT and PT was thus excluded.

It was observed that simple delay of 3 minutes in making the blood smear from freshly drawn venipuncture blood revealed marked platelet clumping.

In the patient reported, PT was excluded, The most likely cause for this thrombocytopenia was his medications.

Clinicians should be aware of this laboratory-induced factitious platelet clumping due to a delay in making a blood smear.

Reference

1. Williams, W.J., Beutler, E., Erslev, A.J. and Lichtman, M.A.: Pseudo thrombocytopenia, (3rd Edition) 1983: 1290.

Correspondence to:
Robert T.S. Jim, M.D.
Professor of Medicine
University of Hawaii School of Medicine
2812 A Puuhonua Street
Honolulu, Hawaii 96822
Telephone: 988-3658
Pager: 576-7270

Cancer Research Center Hotline

Your Link to Cancer Information: The Cancer Information Service of Hawaii

Brian Issell MD, and Hali Robinett MPH

Explaining what a diagnosis of cancer means for a patient is a challenging and time consuming process. The complexities of the disease and its management, along with fear evoked by hearing the word cancer often result in considerable distress for patients, family and providers as they negotiate optimal treatment decision making and care. Treatment recommendations may rapidly change as a result of new findings from the largest disease related research enterprise in existence.

As the foremost source for cancer information, the Cancer Information Service (CIS) was established in 1975 by the National Cancer Institute (NCI) to meet the information needs of cancer patients and their families, health professionals, and the public. CIS applies a unique health communications model to communicate the latest research findings about cancer detection, treatment, supportive care and prevention, to its users. At the University of Hawaii's Cancer Research Center, the Cancer Information Service has served as the NCI's link to the public by providing critical cancer information to Hawaii's patients and their families, health professionals, and the public since 1983. In its long history, CIS has evolved considerably from a program that began as a telephone service, to one that now includes a Partnership Program and research initiative.

Long considered a mainstay of the program, the CIS toll-free information service - 1-800-4-CANCER - has expanded to provide callers with several options. In addition to speaking with an Information Specialist, callers can opt to listen to recorded messages 24 hours a day, 7 days a week; connect to one of the CIS smoking cessation or Spanish call centers; or order publications through the CIS Publications Ordering Service. Although the 1-800 service is no longer operated at the University of Hawaii Cancer Research Center, CIS Information Specialists at the Fred Hutchinson Cancer Research Center (FHCRC) in Seattle, Washington, continue to provide thorough and personalized attention to each caller from Hawaii. CIS Hawaii staff assist the FHCRC staff in this regard by providing regular training specific to Hawaii culture, geography, communication styles, cancer problems, and resources. In addition, frequent communication between the Hawaii and Seattle offices helps the phone staff remain up to date with island events and services.

With 45% of today's Internet users searching for health related information, most seeking information about cancer, the CIS recognizes the need to make cancer information readily available via the Internet. To meet the new demands of today's consumers, the CIS provides a vast array of information through the NCI's website (http://cancer.gov). At cancer.gov, users can find the latest, scientifically-based cancer information regarding treatment options including clinical trials (http://cancertrials.nci.nih.gov), cancer risks, complementary and alternative medicine, and other related topics. In addition, users can order NCI publications online through the NCI's Publications Locator Service. An online instant messaging service for users who need help finding and understanding NCI information is also being piloted.

To reach those who do not traditionally seek health information, or those who may have access difficulties due to cultural, educational, financial, or language barriers, CIS Hawaii works in partnership with national, state, and local organizations to address the cancer information needs of minority and medically underserved audiences in Hawaii. Partnership Program staff provide expertise and information to these partners, strengthening their ability to educate and communicate about cancer. CIS Hawaii staff provide an array of services to meet the distinct needs of each organization, offering expertise in the areas of promotions, training, materials development, and new technology. CIS Hawaii staff work with partners to increase knowledge in breast and cervical cancer education, clinical trials, and tobacco control - those areas with the greatest potential to lessen the cancer burden in Hawaii.

Recognizing that Native Hawaiians have the highest cancer mortality rate of the five largest ethnic groups in the islands and the third largest mortality rate in the nation, CIS Hawaii staff strive to decrease this disparity by collaborating with organizations reaching the Native Hawaiian population. In addition, the Partnership Program actively seeks new partnerships with organizations focused on reaching other medically underserved populations in Hawaii.

In supporting the mission of both the Cancer Research Center of Hawaii and the National Cancer Institute, the CIS plays an important role in research by studying ways to promote healthy behaviors and communicate cancer information effectively. In addressing research priorities, CIS Hawaii networks with researchers at both community and academic levels, interested in studying better ways to communicate cancer messages. CIS supports research studies that test strategies and technologies within the broad span of research fields - cancer control, behavioral research, social psychology, informatics, nursing and others - to determine how best to communicate about cancer. CIS works with research partners to recruit participants; test telephone or Internet-based protocols; and test strategies designed to meet the needs of underserved populations.

The CIS is here to help you and your patients. Please do not hesitate to use or encourage your patients to call the toll free information service at 1-800-4-CANCER. You may reach our Honolulu office at (808) 586-5853, visit us at the Cancer Research Center of Hawaii located at 1236 Lauhala Street, or visit our website at http://cis.nci.nih.gov.

Office of Cancer Communications

National Cancer Institute

Pap Tests

A healthy habit for life!

Pap tests can help find cervical cancer at an early stage — while it's still easier to cure.

Call the National Cancer Institute's Cancer Information Service at
1-800-4-CANCER (1-800-422-6237)

Visit NCI's website at http://www.nci.nih.gov

NATIONAL CANCER INSTITUTE

PUBLICATIONS FOR

Cancer Patients and Their Families



To order these and other materials, call the Cancer Information Service, a program of the National Cancer Institute, at

1-800-4-CANCER

(1-800-422-6237)

Persons with TTY equipment, dial 1-800-332-8615.

These and other cancer publications are also available on NCI's Website at: http://rex.nci.nih.gov

News and Notes Henry N. Yokoyama MD

Potpourri I

Seems a 70 year old gent and his 67 year old baby doll made an appointment with a doctor, went to his office and said they were having certain problems, and would he please watch them do some smooching.

The doctor looked puzzled, but agreed. When the couple had finished, the doctor said:"Looked OK to me. I didn't see anything wrong." He charged them $32.

This happened several weeks in a row. The couple would make an appointment, smooch, pay the doctor and leave. Finally, the doctor, thoroughly puzzled, asked, "Exactly what are you trying to find out."

The old gent said, "We are not trying to find out anything. She's married so we can't go to her house. I'm married and we can't go home. The Holiday Inn charges $60, the Hilton charges $78. We do it here for $32 and I get a $28 refund from Medicare."

(Muriel M. Muraoka, former nurse for Harry Arnold Jr. sent us this joke she received from Harry Arnold Jr. in 1991... Thanks Muriel, it revived many pleasant memories of HHA2...)

Potpourri II

Another busy day in my small town, Nova Scotia practice and I'd seen my share of colds, rashes and Paps that morning...Just before lunch, a young mother came in for her new baby boy checkup... The little fellow had a rather unusual name... I asked why they'd chosen his name. The new mother laughed and said, "He's named for where he was conceived..."Dakota"...I knew the father was in the military, so thinking he must have been stationed in the States, I replied, "Oh, is that North or South?"

Stunned silence... Pause..."No, a Dodge Dakota."

Dr. Lana Beth Barkhouse

Potpourri III

The Birds & The Bees:

A female patient in her 30's mentioned she'd never had a Pap smear...I rescheduled her and she returned a month later...Before the Pap, I tried to elicit some sexual history... I asked her if she had any "partners"...I asked her if her partners used condoms...She replied "no." I asked if she was trying to conceive. She stared at me blankly...

I asked her if she understood that with regular sexual activity without birth control she could certainly become pregnant...She replied that she never realized she was at risk of getting pregnant and wondered how it was possible...

I asked her why she thought she couldn't get pregnant, hoping she'd give me the answer to this confusing picture. She did when she replied: "You do understand I have a female partner."

Potpourri IV

Dream On:

I used to work for McKellar Hospital as a general pediatrician and covered the neonatal care unit...One day, I found a group of student nurses and their supervisors around a newborn baby with significant priapism...I was about to give the students a lecture about this natural event and asked "What do you think priapism is? A female family doctor who was passing by exclaimed quite loudly without missing a beat..."Every woman's dream."

Dr. Antonio Belda, Ontario

A gentleman on a train who suffers from absent mindedness, carefully searched thru his pockets while the conductor waited patiently. Finally he said, "This is terrible. I know I have a ticket, but for the life of me, I can't remember what I did with it."

The conductor said, "All is not lost, sir. You can pay me directly. Then when you find the ticket. You can return it and get your money back."

"But that's not the point," said the man in agony..."I don't remember where it is I'm going."

Like A Summer Breeze:

Over 40 years ago when I practiced in northern Ontario, one of my patients was a delightfully straight forward lady whose English was better than my French...

She wasn't a frequent visitor to our office, but when she did have a complaint, it was very specific and readily pointed to a treatable diagnosis...

My aide took her to the examining room and when I entered, she had removed her dress and slip and crawled up on exam table and pulled the linen sheet over her abdomen...

When I asked about her problem, she lowered the sheet and put her hand on her abdomen and said, "Doctor, it's de gas" "When I get in bed at night, she starts to move." And she moved her hand in a clockwise motion over her abdomen.

"I reach down and part the cheeks," and she put her hands on her buttocks. "And de wind she blow the bed sheets...It's just like a summer breeze...It's not like a fart at all."

So we had the surgeon remove a gall bladder full of stones and her problem was solved...

Dr. J.W. Marlone, Ontario

IRRITABLE BOWEL SYNDROME

Visiting Professor Lin Chan from UCLA - QMC

Incidence of IBS: Primary care: 12%; GI Setting 28%

Epidemiology: 15% of population; Women oftener than men...

Evaluation: ↑ sigmoid contraction c̄ IBS; visceral hypersensitivity...

↑ ↗

→ EMS (Emotional Motor Syndrome)

↙ ↓ ↘

Diagnosis of IBS:

Rome II Criteria:
- 12 weeks (past 12 mos)
- Abdominal pain: Relieved by defecation
- 3 stools/d

Ddx:
a. Dietary factor
b. Infection
c. Inflammatory bowel syndrome
d. Anxiety?

Red Flags: alternative dx
- Anemia
- Fever
- Severe constipation

Diagnostic Test:
Age <50:CBC, electrolytes;liver enzymes, sigmoidoscope
Age >50: BE; colonoscopy
Symptoms: constipation; diarrhea; pain/bloating

Management IBS:
a. Education, reassurance, etc.
b. Dietary modification
c. Fiber
d. Symptomatic Rx
e. Psychological: Behavoral options
f. Realistic goals
g. Psychological: Behavoral options
h. Realistic goals

Therapy: Management of pain, diarrhea, constipation c̄ antispasmotics, ↑ fiber, and opioid like agents

Drugs: Laxatives & bulking agents (laxatives; MOM; Psyllium)

Commentary:
- Placebo response (70-80%)
- Antispasmodics: not effective
- Antidiarrheal Rx: Imiperal etc.
- Tricyclic antidepressants & SSRI's

Tricyclic Antidepressants & SSRI's:

- Low dose effective for pain: Start c̄ 10mg → 50mg
- Amitriptyline:
- SSRI's: Adjunctive Rx

LOTRONEX (Alosetron HC1) NEM approved for IBS; Rationale:
↓ Serotonin (5HT)
Serotonin role: ↑ 5HT in IBS
Alosetron: 1mg bid most effective; relaxes colon → relief
1mg bid for 2 weeks as clinical trial;
12 weeks treatment;
Adverse effect: 5% constipation; Pt should have < 78% diarrhea. Caution: Don't use in pt with constipation.

LOTRONEX: Adverse Effects:
a. Constipation;
b. Ischemic colitis;
c. ↑ liver enzymes
Treatment dose: 1 mg bid with or without food.

Visiting Professor John Speer Schrader, Queen's Friday, Sept. 25, 2000

John Speer Schroeder MD
Division of Cariovascular Medicine
Falk Cardiovascular Research Center
Stanford University School of Medicine
300 Pastour Drive
Stanford, CA 94305

NEW TARGETS FOR HYPERTENSION, DIABETES AND HYPERLIPIDEMIA/CAD

New Targets for Hypertension
- SBP 130; 140 in elderly
- DBP 80
- Use: ACE I quinapril (Accupril) ramipril (Altace)
  ARB if cough telmesartan (Micardis) losartan (Cozaar)
  or dihydropyridine amlodipine (Norvasc)
  Add 12.5 HCTZ Hydrodiuril or triamterene/HCTZ (dyazide or maxide)
  Start with CCB if angina/IHD: Diltiazem CD
- Add ARB to ACE I in difficult to control HTN. Consider adding carvedilol (Coreg) which does not ↑ insulin resistance
- For ISH in elderly:
  Amlodipine 2.5 → 5
  Add HCTZ 12.5

New Targets for DM
Control BS/HbAlc: HbAlc< 6%
Use Insulin sensitizers:
metformin (Glucophage) 500 bid → 1000 bid if CR<2
pioglitazone (Actos) 7.5 → 15 → 30 → 45
rosiglitazone (Avandia) 2 → 4 → 8
- Add glipizide (Glucotrol XL) 5-10 qd or bid
- Avoid diuretics/BB which ↑ insulin resistance
- Tight WT and BP control

New Targets for CAD/Hyperlipidemia
Known CAD/vascular disease
TC 150 (down to TC 125 probably safe)
LDL 60-80
Use atorvastatin (Lipitor) or simvastatin (Zocor) up to 80 mg qd or qhs
Diet < 20 mg SR
Avoid diuretics
Avoid BB unless post Q MI or CHF
Primary prevention
TC < 200
LDL < 100
Aggresive lowering as risk factors ↑ such as family Hx, smoker, sedentary, postmenopausal, HTN
Diet < 25 grams SF

Use Multifactorial RF Reducton for Both Primary and Secondary Prevention
- Exercise 30 min every day
- ASA 80 mg EC if CAD or > 50 yrs old
- Fish oil (omega - 3 oil) 1G
- Vit E 400 IU
- Vit C 500 mg
- Calcium carbonate 1G (1.5G post menopausal)
- Folic acid 400-800 µgm
- Multivit with B
- HRT (Use caution if recent CV event)
- B-13 catradio/norgestimate (Ortho-prefest®)
- Or B estradiol/norethindrone (Fem HRT®)

Evolving
- Consider tissue ACE I quinipril (Accupril®), ramipril (Actace®) in all patients with vascular disease regardless of hypertension status

---

Quotable Quotes

A generalist is someone who learns less and less about more and more until he knows nothing about everything...

A specialist is someone who learns more and more about less and less until he knows everything about nothing...

Anonymous

Varicose Veins are the result of improper selection of grand parents...

William Osler

Ratner's Law: Beepers work better if you turn them on.

Thomas Sydenhome

Bennett's Axiom on lab tests: "If you get a lab test to reassure a patient, the result will always be abnormal...

Corollary No. 1: Unexpected lab results will not correct themselves no matter how often you look at the chart...

To err is human. To forgive is against departmental policy...
A drug is a substance that when given to a patient produces the side effect you forgot to mention...

Howard Bennett

After two days in the hospital, I took a turn for the nurse...

W.C. Fields

ASSISTANT PROFESSOR OF GERIATRIC MEDICINE, Position Nos. 88915T and 88927T, M3, Geriatric Medicine Program, John A. Burns School of Medicine, F/T, to begin approx. July 2001 for one-year, non-tenurable. Duties: Develop academic career in geriatrics, supervise residents and fellows in the care of older patients, participate in research, and education, develop research/medical education grant-funded projects. MQS: MD degree; board eligible or board certified, fellowship in Geriatric Medicine, Certified (or eligible for certification) in Geriatric Medicine, eligible for Hawaii license and demonstrated ability in teaching. Min. Annual Sal: $78,924. Send updated c.v., bibliography, and 5 names of reference to Patricia Lanoie Blanchette, MD, MPH, Geriatric Medicine Program, John A. Burns School of Medicine, University of Hawaii, 347 No. Kuakini St., HPM-9, Honolulu, HI 96817. Closing date: May 1, 2001. An EEO/AA Institution.

Nurses the  *of Healthcare*

Registered Nurses, Licensed Practical Nurses, Medical Assistants

Qualified and experienced in a wide variety of job settings.

All applicants carefully screened and matched to your specific job.

We are fully responsible for payroll, taxes, benefits and insurance.

Kahu Malama Nurses, Inc.

Short & Long Term Staff Relief and Permanent Placement

Serving Hawaii since 1982

Available 24 hours

(808) 951-0111 Fax: 949-3834

Inter-island: 1-800-773-9021

e-mail: nurses@kahumalama.com

Aloha Laboratories, Inc.

...When results count

CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

David M. Amberger, M.D.
Laboratory Directory

Phone: (808) 842-6600
Fax: (808) 848-0663
E-Mail: results@alohalabs.com
http://www.alohalabs.com

WE COLLECT PAST DUE ACCOUNTS

Only 25%* fee for Health Care Firms!

Why give up more!

Wood & Tait

HI Collection & Detective Agency
Staff on Kauai, Oahu, Maui, & Hawaii
http://www.woodtait.com

739-0433

jwood@woodtait.com

*Applies to accounts assigned during this promotion; no restrictions as to dollar size or age of accounts. Fee will increase to 50% if litigation or forwarding required; you will receive a contract.

Air Force Healthcare. Good Pay. Professional Respect.

That's Why No One Comes Close.

Experience the best of everything: best facilities, best benefits. Outstanding opportunities for travel, 30 days of vacation with pay, training and advancement.

For an information packet, call
1-800-423-USAF
or visit
www.airforce.com.

U.S. AIR FORCE

Classified Notices

To place a classified notice:

HMA members.–Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.

Nonmembers.–Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Locum Tenens

LOCUM TENENS– Board Certified FP available for summer Locum Tenens office coverage. Please call Vadim Braslavsky, MD (913) 685-7494 or visit www.concentric.net/~locumdr/1.htm.

The Weathervane Russell T. Stodd MD

When Sammy Davis Kissed His Girl, Do You Think He Closed His Bad Eye?

A study at the Mayo Clinic in Rochester, Minnesota, was conducted with laser pointers. Three patients whose eyes were going to be enucleated for uveal melanoma agreed to the research. Laser pointers were directed at retinas which were exposed for durations up to fifteen minutes. The eyes were examined at intervals from 24 hours up to 15 days, and at post enucleation. Other than transient afterimages, investigators were unable to document any functional, ophthalmoscopic, fluorescein angiographic or histologic evidence of damage to the eye. On the basis of this study, the risk to the human eye from class 3A laser pointers with powers of 1,2, and 5 mW, was believed to be negligible. How sad for plaintiffs' attorneys.

There Is Much To Be Said For Failure. It's More Interesting Than Success.

What a surprise! The Government Accounting Office (GAO) has assessed the National Practioners Data Bank (NPDB) and brought some heavy criticism. The GAO reported to Congress that "the National Practitioner Data Bank contains sets of data that are incomplete, inappropriate, inconsistent and inaccurate." The GAO found that nearly all the malpractice records reviewed were incomplete, and that one-third contained patients' names (a reporting violation). The intent of the NPDB is to keep a record and track problem physicians, but instead the bank collects a lot of useless data which does nothing to assess the quality of any doctor in question. In typical governmental officious denial, the deputy administrator, Thomas Morford, objected to the GAO findings. "We think the data are accurate." A much more useful monitoring device is through physician profiling systems within state run data banks, a system presently working in about half the states. But facts do not deter bureaucrats, and despite protests from the American Medical Association and others that the bank fails to do what Congress intended, bureaucrats have persisted. Very possibly, like any other failing government program, they will expand it.

Snap Judgements Are Easily Unfastened.

Across the country the question of medical marijuana has been one of controversy and confusion. In California, voters passed proposition 215 legalizing medical use of marijuana, and the Oakland Cooperative was established for medical distribution of the drug. However, the Controlled Substances Act of 1974 makes it illegal to distribute or manufacture marijuana. Government lawyers say that Congress has decided there is no accepted medical use of marijuana. Ergo, the federal government filed a lawsuit asking a judge to ban the Oakland Cooperative from supplying marijuana, and now the case has percolated up to the Supreme Court of the United States. The same nine souls who untied (?) the knot in the Florida presidential election have decided to rule on the medical use of marijuana. There can be no doubt that if the Supreme Court rules in favor of the medical use of marijuana, state laws will change across the nation. Already, nine states, including Hawaii, have passed laws permitting the use of cannabis for medical reasons. Many doctors claim that for sick patients there is no other lawful drug alternative that helps chemotherapy patients stave off nausea, or that helps AIDS patients stimulate their appetite. The Court expects to hear arguments in the spring.

I Regard Golf As An Expensive Way Of Playing Marbles.

The high court, on a somewhat less momentous issue, will decide the fate of professional golfer, Casey Martin. Mr. Martin, who suffers from a degenerative circulatory disorder that makes walking painful, is citing the Americans with Disabilities Act, and demanding that the Professional Golfers Association (PGA) grant him the right to ride in a golf cart. The rules state that the participants in competition must walk, and the PGA has denied his request. Their attorney contends that golfers must walk as much as 20 miles during a four day, 72 hole sponsored event. Walking the terrain in the heat and humidity is an important and challenging part of the game. Justices Ruth Bader Ginsburg, Sandra Day O'Connor, and John Paul Stevens are golf enthusiasts. Justices Anthony Kennedy and David Souter offered that perhaps the courts should defer to the PGA's rules. So, okay, it's not Roe v. Wade, or Brown v. Bd. of Education, still, to golfers the matter is really, really important. Previously, the Court has viewed the ADA with narrow definition.

Some Days You're The Dog, Some Days You're The Fire Hydrant.

Like a simmering pot that moves from the back to the front of the stove, the medical liability issue is heating up once more. The relative calm we have enjoyed through the 1990s is about to end, and clouds are gathering. In Hawaii, underwriters have suffered increased losses in recent years, dividends are disappearing, and holding the line on premiums is becoming problematic. Still, the worst direction is to have the state involved. In Pennsylvania, physicians must purchase malpractice insurance and then pay a surcharge to underwrite the state's Medical Professional Liability Catastrophe Loss Fund. In 1995 when the fund faced a shortfall, it imposed a surcharge on top of a surcharge. Last year (2000) a heavy flood of payouts from the CAT fund means that the state needs an additional $25 million to cover losses. And where will that money come from? As in 1995, doctors and hospitals, of course. Depending on specialty, Pennsylvania physicians will pay from 7 to 56% more in 2001.

By The Time You Understand The Disease, Your Brain Implodes.

Mad-Cow fever is gripping Europe, and calls are now being made for precautions in the United States. Advisers to the Food and Drug Administration are recommending that blood donors who have lived in Europe or the United Kingdom for six months (Red Cross is asking for three months) or longer in the years 1980 to 1996, should not be allowed to contribute blood or blood products During that time tens of thousands of animals infected with mad-cow disease were eaten in the U.K. according to Ermias Belay, epidemiologist with the Centers for Disease Control and Prevention. Creutzfeldt-Jakob Disease (CJD), the fatal brain-wasting human disease, is believed to be transmitted by eating animals infected with mad-cow disease, but no cases of mad-cow disease have been found in the U.S. There is no evidence that it has been passed between humans through a blood transfusion, but studies in sheep have found that a variant of CJD can be so transmitted. In the U.S. the Agriculture Department is examining brain tissue of sick animals to rule out the disease. Also, the U.S. prohibits importation of cattle, sheep and goats from Europe, as well as their biological products, without a special permit for research.

He May Be A Genius. The Contrary, Of Course, Is More Likely.

According to the military, at any time, forces may be deployed to areas of the world with risks of biological warfare. Hence, anthrax vaccine is now being included for troops. Captain John Buck, M.D. an Air Force physician, has decided he doesn't like the idea, and has refused the vaccine. Dr. Buck views it as an investigational vaccine being used in an off-label fashion even though it has been in use for over 30 years. He faces court martial. Apparently Dr. Buck forgot that when he took the oath with the Air Force, he thereby relinquished his right to determine which orders he would obey. Going back to the days of the Roman military, "there's the right way, the wrong way and the Army way."

Count The Towels, Silver And Furniture, Martha. Elvis Is Leaving.

Any final traces of respect for the Clinton presidential years, disappeared with the departure of Bubba from the White House. Creative word definitions, draft evasion, property scams, adultery, estrangement, the Lincoln Room $$$ motel, a new use and flavor of cigars, blatant perjury, trading military secrets for Chinese campaign fund contributions, topped off by unbelievable monetary pardons of slimey bottom feeding criminals. What a guy! Leaving at Andrews Air Force Base to a self-aggrandizing speech and inspection while his successor was being inaugurated, could not be more typical, nor more lacking in class. Meanwhile his teen-age-mentality staff was moving out of the White House by removing keys from typewriters and computer boards, gluing file cabinets closed, scribbling graffiti and vulgar cartoons on the wall, and even pilfering silverware. Many of us won't miss him, but the late night comedians are in mourning. What a tribute to our mighty constitution and our republic that the country survives.

ADDENDA

❖ The average age of widowhood in the United States is 56.

Aloha and keep the faith —rts■

Contents of this column do not necessarily reflect the opinion or position of the Hawaii Ophthalmological Society. Editorial comment is strictly that of the writer.



Checked your practice lately?

You strive to be the best practitioner you can. You stay current in your field. You spend countless hours checking on the health of your patients.

Who is checking on the health of your practice?

Is your business thriving? Should you understand the cash flow side of your business better than you do?

TeamPraxis manages the business side of medicine. We optimize your:

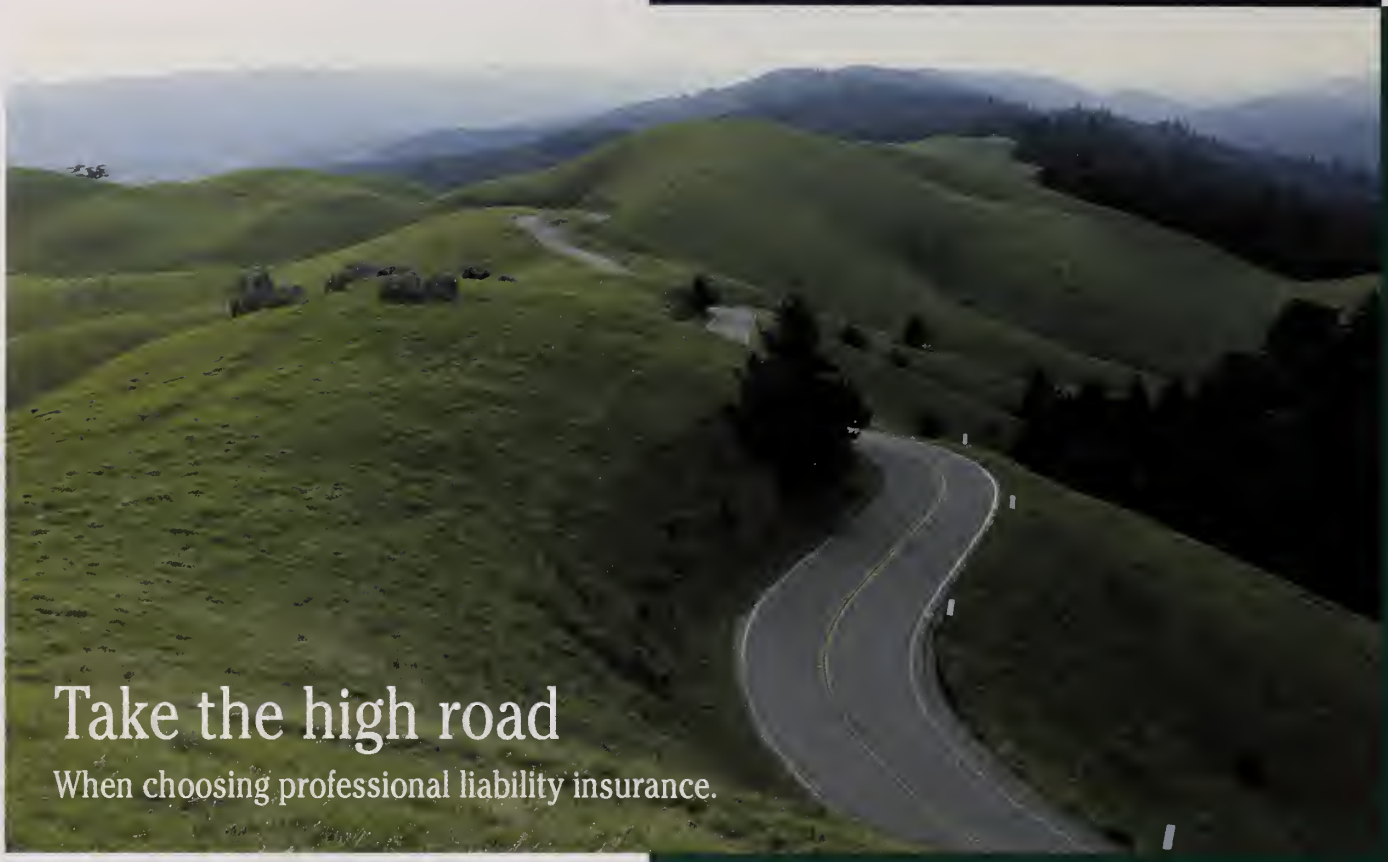
- ***CPT coding.***
- ***Patient billing and collection.***
- ***A/R management.***
- ***Cash flow.***
- ***Work flow management.***

Give us a call to get a free consultation.

TeamPraxis
Your practice management team.

948-9343
Neighbor Islands, call
866-TPRAXIS
(866-877-2947)

www.TeamPraxis.com



NO RATE INCREASE IN 2001

MIEC

Medical Insurance Exchange of C

6250 Claremont Avenue
Oakland, California 94618
800-227-4527
www.miec.com

HAWAII CLAIMS OFFICE:
1360 South Beretania Street,
Honolulu, Hawaii 96814

Rated "A" (Excellent) by A.M. Best

Sponsored by the Hawaii Medical Association

THE SAFEST ROUTE IS
WITH AN EXPERIENCED GUIDE.

In Hawaii, that's MIEC. We are the West's first physician-owned, not-for-profit professional liability insurer. For more than tury, we've protected ally secure coverage. for our unsurpassed, k record of returning dits to policyholders, results permit. We've returned over $200 million.

Professional liability insurance is a long-term business relationship. At MIEC, we take this commitment seriously.

Choose the genuine original, MIEC.

Hawaii medical Journal
v. 60
n. 4
April 2001
Received on: 05-16-01
Brown University Library
SCI

HAWAII MEDICAL JOURNAL

May 2001 Volume 60, No. 5 ISSN: 0017-8594

L 5147
R5
H25x
SCI



MIXED ADC 967
Serials Dept
Sciences Library
Box I
Brown University
Providence, RI 02912-0001



DERMIK

Innovation that makes a world of difference

Our Mission: To become a global leader in providing innovative dermatological products to patients and healthcare providers.

To learn more, call 1.610.454.8110, or visit our site on the World Wide Web at http://www.dermik.com

Platinum Benefactor

Honor Society

Dermik Laboratories supports research in skin care through a grant to the Dermatology Foundation

DERMIK LABORATORIES, INC.

Dedicated to Dermatology™

A RHÔNE-POULENC RORER COMPANY


NOW AVAILABLE
Protopic®
(tacrolimus) Ointment
0.03% 0.1%
Fujisawa Healthcare, Inc.
©2001 Fujisawa Healthcare, Inc. PT004 2/01

Our pledge to you

As Straub physicians, we welcome your referrals... and pledge to:

- Report our evaluation to you promptly by phone, fax or mail (whatever you prefer).
- Never make secondary referrals without your approval.
- Always direct the patient back to you for continuing care.

To make your referrals easy, we have a Physician Referral Specialist, Kym Kaohi. To contact Kym and to get a binder on Straub specialists and services, call 522-4444.



KYM KAOHI, MA • PHYSICIAN REFERRAL SPECIALIST



For assistance, call Kym at 522-4444

Straub
Partners in health
straubhealth.com

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
John Breinich MLS, Satoru Izutsu PhD,
James Lumeng MD, Douglas G. Massey MD,
Myron E. Shirasu MD, Frank L. Tabrah MD,
Alfred D. Morris MD

Journal Staff
Editorial Assistant: Drake Chinen

Officers
President: Philip Hellreich MD
President-Elect: Gerald McKenna MD
Secretary: Calvin Wong MD
Treasurer: Paul DeMare MD
Past President: James Lumeng MD

County Presidents
Hawaii: David Camacho MD
Honolulu: William McKenzie MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Gardner Quarton MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 2001 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 122

Medical School Hotline
Kamal Masaki MD and Patricia l. Blanchette MD, MPH, FACP 122

Improvement in Quality of Life after Bilateral Transthoracic Endoscopic Sympathectomy for Palmar Hyperhydrosis
William T. Lau, Jeffrey D. Lee MD, Collin R. Dang MD, and Lorrin Lee 126

Cancer Research Center Hotline
Karen Glanz PhD, MPH 128

News and Notes
Henry N. Yokoyama MD 130

Classified Notices 137

Weathervane
Russell T. Stodd MD 138



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

Ilio

Ilio means "dog" in Hawaiian. Depicted here is a petroglyphi dog scene.

Editorial

Norman Goldstein MD
Editor, Hawaii Medical Journal

Watch the Wasabe!

Severe Palmar Hyperhidrosis treated by Transthoracic Endoscopic Sympathectomy

The manuscript by William Lau, Jeffrey Lee, Collin Dang, and Lorrin Lee deals with a unique surgical procedure to help the "quality of life". The authors performed the procedure on only eight patients to date, and despite some adverse effects of the surgery, all patients reported an improvement in their "quality of life".

This severe form of palmar hyperhidrosis is not just seen in the dermatologist's office. All physicians encounter patients with this sweating *in extremus* of the hands. Estimates of this condition range from 0.6-1% of the population.

It must be emphasized that transthoracic endoscopic sympathectomy should never be considered first-line treatment for palmar hyperhidrosis.

Most people who have hyperhidrosis are treated with conservative less aggressive methods, including:

Continued on p. 129



Medical School Hotline

The Geriatric Medicine Fellowship Program at the John A. Burns School of Medicine, University of Hawaii

Kamal Masaki MD, Associate Program Director, and Patricia Lanoie Blanchette MD, MPH, FACP, Program Director

Background: By the year 2030, one in five Americans will be 65 or older.[1] Public health measures and advancing medical science have combined to enable many more people to live out an ever increasing life expectancy. In social terms, this means that more families have a greater number of living generations, helping to root children in the cultural history of their own families. The social value of this phenomenon is immeasurable. The fastest growing segment of the population is those aged 85 and older. Life expectancy in Hawaii is the highest in the nation.[2]

In the 1970's the Institute of Medicine of the National Academy of Sciences concluded that Geriatric Medicine should be taught in medical schools and that it should emerge as a recognized specialty for teaching, research and practice. In the year 2000, a conservative estimate of the number of geriatricians needed was 30,000 nationally. However, there were only 9,000, making Geriatric Medicine a critical shortage specialty.[3,4] Some states do not have any geriatricians, and some medical schools have been unable to fill faculty positions in geriatrics for years. In response to this national and Hawaii shortage, the Geriatric Medicine Fellowship Program was established in 1986 following the establishment of the Geriatric Medicine Program at the John A. Burns School of Medicine in 1984.[5]

The program began with 1 fellow, and has grown to 13 fellows each year in academic year 2001-2002. Funding for these 13 positions is from the following sources: Kuakini Medical Center, 5; Department of Veterans Affairs, 5; Kaiser, 1; the Queen's Medical Center, 1; and the PACE program at Maluhia, 1. One year of clinical training is required for eligibility for the Certificate of Added Qualifications (CAQ) in Geriatric Medicine. The fellowship program has been accredited continuously since 1987, the first year that accreditation was offered in this field.

The faculty in Geriatric Medicine has expertise in medical education, research, and clinical medicine. The core faculty now number 24, with expertise in Geriatric Medicine, Geriatric Psychiatry, Epidemiology, Neurology, and Cardiology. In addition, there are 14 associate faculty who participate in the educational experience of the fellows, with expertise in Gerontology, Geriatric Rehabilitation, Geriatric Dentistry, Audiology, Psychology, and Gerontechnology.

The Fellowship Program: Applicants for the program that leads to the Certificate of Added Qualifications (CAQ) in Geriatric Medicine must be residency trained and board eligible in either Internal Medicine or Family Practice. There are 2 tracks: a 1-year clinical track for those planning a career in primary care, and a 2- or 3- year academic track for those interested in research, medical education, medical administration, or consultative medicine. Initially, two

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA

years of training were required to take the (CAQ) examination in Geriatrics. In 1995, this requirement was reduced to one clinical year. However, additional years were highly recommended for those pursuing an academic career or consultative practice. The program has been filled every year. For the academic year 2001-2002, over 170 applications were received for 11 first-year fellowship positions.

The program has a comprehensive curriculum and written goals and objectives for each rotation. The program meets and exceeds the requirement for fellowship programs nationally.[6] The fellows receive training in varied clinical settings, including hospital, outpatient, home care, and nursing home care. The training includes both primary care and consultations in Geriatric Medicine. By the end of the fellowship, fellows are well prepared to care for patients in many different settings.

Fellows spend approximately 8 hours a week in didactic activities. These include: case conferences; grand rounds; board review sessions; "core curriculum" lectures; weekly journal club; a 40-hour course in epidemiology; a 60-hour course in research methods and statistics; and seminars in evidence-based medicine, law and ethics, and end-of-life care. Field trips are organized to sites important to elder care, such as assisted living facilities, adult day care facilities, retirement communities, and care homes.

All fellows have longitudinal patient experiences for the entire duration of the fellowship and block rotations. A half-day each week is spent in a primary care clinic, where, under faculty supervision, the fellow functions as though they were the primary care physician. Most of these patients are well elders. Fellows are taught principles of preventive care in healthy elders. Similarly, each fellow is assigned a number of nursing home patients whom they follow for the entire duration of their training. These nursing home patients are usually very frail and emphasis is placed on excellence in end-of-life care.

The block rotations last approximately 2 months each, as follows:

- **The Kuakini Geriatric and Family Consultation Service:** A comprehensive outpatient interdisciplinary team evaluation service that provides consultation and short-term case management by referral from primary physicians.
- **Kuakini Medical Center Rotation:** This is an inpatient hospital rotation at Kuakini Medical Center. It includes primary care and hospital consultations.
- **Nursing Home Rotation:** The fellow performs nursing home consultations and receives instruction in medical directorship of nursing homes.
- **Kaiser HMO Rotation:** This rotation is designed to thoroughly familiarize the fellow with health care delivery to elders in an HMO setting. There are a range of experiences, including acute care, nursing home care, home care, and outpatient comprehensive consultations.
- **VA Outpatient/Home Care Rotation:** Experiences include primary care and the Geriatrics Evaluation and Management (GEM) clinic. Fellows also make home visits for frail elders.
- **VA Center For Aging (CFA) Rotation:** A long-term care and rehabilitation facility for veterans, where fellows receive experience in geriatric rehabilitation.
- **PACE Rotation:** The Program of All-Inclusive Care of the Elderly (PACE) at Maluhia is a state-sponsored program that serves a frail elderly population. Fellows work in several settings during this rotation, including outpatient, inpatient, day care, nursing home, and home care.
- **Queen's Medical Center Rotation:** Fellows work with both geriatricians and geriatric psychiatrists in hospital consultations and interdisciplinary management.

The second and third years of fellowship training are primarily academic years. Fellows plan and carry out independent research projects, usually in epidemiology or medical education. They also have the opportunity to earn advanced degrees, such as a Masters in Public Health, or a Ph.D. in Biomedical Sciences. To date, two fellows have completed an MPH degree, three have received an advanced certificate in Gerontology, and one has completed a Ph.D. in Biomedical Sciences. Two current fellows are working towards an MPH and are expected to graduate in May 2001.

Medical Student Education: A primary goal of the JABSOM Geriatric Medicine Program is to provide education for medical students and for residents in Internal Medicine, Family Practice, GYN and other specialties. The fellows supervise medical students and residents during their electives in Geriatric Medicine. They also serve as Problem-Based Learning (PBL) tutors for medical students during Unit 5, the life cycle section. To help them be better teachers, fellows are taught principles of effective clinical and didactic teaching, and participate in bedside teaching workshops.

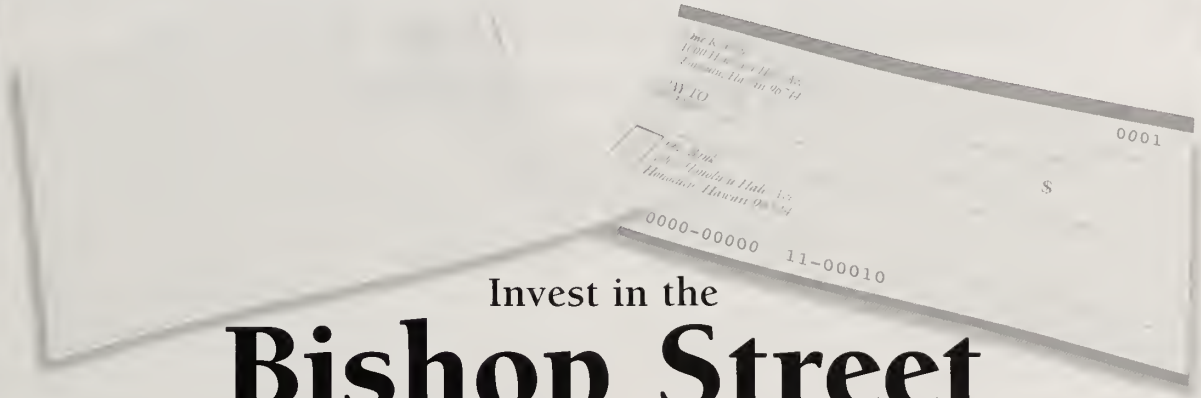
Affiliated Programs:

- **John A. Hartford Center of Excellence in Geriatrics (COE):** A grant from the John A. Hartford Foundation to train academic geriatricians. (1997-2001, 2001-2004)
- **Pacific Islands Geriatric Education Center (GEC):** Funded by the Public Health Service for interdisciplinary geriatrics education. (1987-present)
- **Research Programs:** Fellows are involved in significant research programs, including: Honolulu Heart Program and Honolulu-Asia Aging Study, Women's Health Initiative, Women's Health Initiative Memory Study, Genetic Determinants of High Blood Pressure, Pacific Genetic Epidemiological Study of Aging (PACGEN), Macronutrients and Blood Pressure -Hawaii INTERMAP Center, Hawaii Diabetes Registry.
- **Geriatric Psychiatry Fellowship Program:** Both programs are collaborative efforts between the faculty in Geriatric Medicine and Geriatric Psychiatry (started in 1996).

Graduates of the Fellowship Program: To date there have been 50 graduates of the fellowship program; 32 completed 2 years of training and 18 completed 1 year. Twenty-one of the graduates have remained in Hawaii, 20 are on the mainland, 2 are in Canada, 1 is in Guam, and 6 are in other countries (2 in Japan, 1 each in Korea, Germany, Australia, Romania). Many of the fellows who left the U.S. intend to return after they have met their training visa requirements. Of the 50 graduates, 13 are full-time academic faculty, 2 are part-time academic faculty, 4 are at the VA, 3 are in HMOs, 1 is in

Continued on p. 136

WHICH SIDE OF THE CHECK WILL YOU BE SIGNING THIS TAX SEASON?



Invest in the

Bishop Street Hawaii Municipal Bond Fund

Managed for after-tax returns

★ ★ ★ ★ ★

Rated 5 stars by Morningstar™

(Overall rated 5 stars for the period ending 3/31/01 out of 1,451 municipal bond funds)

- Substantially exempt from federal and Hawaii state income taxes*
- Active portfolio management
- High-quality investment portfolio

For more information and to obtain a prospectus containing important information regarding sales charges and expenses, see the First Investment Center Investment Specialist at your nearest First Hawaiian Bank branch or **call 487-0288 on Oahu or 800-787-2977 from neighbor islands.** Please read the prospectus carefully before investing.

BISHOP STREET FUNDS

*Certain shareholders may be subject to the Alternative Minimum Tax (AMT). Federal income tax rules will apply to any capital gains distributions.

Past performance is no guarantee of future results. Mutual fund investing involves risk, including loss of principal.

For each fund with at least a three-year history, Morningstar calculates a Morningstar Rating™ metric each month by subtracting the return on a 90-day U.S. Treasury Bill from the fund's load-adjusted return for the same period, and then adjusting the excess return for risk. The top 10% of funds in each broad asset class receive 5 stars, the next 22.5% receive 4 stars, the next 35% receive 3 stars, the next 22.5% receive 2 stars and the bottom 10% receive 1 star. The Overall Morningstar Rating™ for a fund is derived from a weighted average of the performance figures associated with its three-, five- and ten- year (if applicable) Morningstar Rating™ metrics. Each fund is rated exclusively against U.S.-domiciled municipal bond funds.

Bishop Street Capital Management, an investment subsidiary of First Hawaiian Bank, serves as investment advisor for the Bishop Street Funds. The Bishop Street Funds are distributed by SEI Investments Distribution Co., which is not affiliated with First Hawaiian Bank, Bank of the West or BancWest Corporation. Securities offered through BancWest Investment Services, a registered broker dealer-member NASD/SIPC. Investment Specialists are registered representatives of BancWest Investment Services.

© 2001 Bishop Street Funds

NOT FDIC INSURED, NO BANK GUARANTEE, MAY LOSE VALUE

Improvement in Quality of Life after Bilateral Transthoracic Endoscopic Sympathectomy for Palmar Hyperhydrosis

William T. Lau, Jeffrey D. Lee MD, Collin R. Dang MD, and Lorrin Lee

Abstract

Objective: *To evaluate the efficacy of bilateral transthoracic endoscopic sympathectomy (TES), in alleviating symptoms and improving quality of life for patients in Hawaii.*

Design: *Retrospective cohort study.*

Materials and Methods: *Patients who had undergone TES were evaluated by phone interview and the SF-36 questionnaire to assess improvements in symptoms and the development of compensatory hyperhydrosis. SF-36 scores were divided into 8 scales and evaluated by one-tailed t-test.*

Results: *Since 1999, eight patients (five women and three men, mean age 27.4 years old, range 15 - 41 yrs) underwent TES without significant complication. Length of hospital stay was less than one day for all patients except one, who stayed four days. Estimated operative blood lost was less than 100 ml and no blood transfusions were required. No Horner's syndrome was suffered. After a mean follow-up of 7.0 months (range 1.2 - 15.8 months), none of the patients had recurrent symptoms in the palms but all reported moderate compensatory hyperhydrosis located mainly in the trunk and lower extremities (two patients). SF-36 scores showed significant improvements in social functioning ($p<0.005$), mental health ($p<0.049$), and role-physical ($p<0.020$) along with an increase in bodily pain ($p< 0.012$).*

Conclusion: *Although TES resulted in some bodily pain and compensatory hyperhydrosis; these elements were outweighed by the improvement in palmar symptoms, social, mental, and role physical functioning, and overall quality of life.*

Correspondence to:
Jeffrey D. Lee, M.D.
1329 Lusitana Street, #709
Honolulu, HI 96813
Tel (808) 531-3311
Fax (808) 550-0279

Introduction

Palmar hyperhydrosis can be an embarrassing ailment that affects the lives of 0.6-1.0% of the population.[1] Excessive sweating and heat in the palms of the hands of those affected characterize this condition. Patients can have problems with fine motor activities using their hands. It can also be associated with wetness and embarrassment to the point of social withdrawal.[2] Non-invasive treatments for hyperhydrosis are available and can be effective in some cases. Transthoracic endoscopic sympathectomy (TES) is an effective treatment that has been proven to relieve symptoms of hyperhydrosis in up to 90% of the patients who do not improve with non-invasive treatments, and to improve their quality of life.[1, 3-7] Complications associated with TES are minimal, although compensatory hyperhydrosis in other locations of the body may occur. We will examine our experience with TES.

Methods

From January 1999 to May 2000, eight patients suffering from primary palmar hyperhydrosis underwent bilateral TES. These patients were treated at St. Francis Medical Center- Liliha and the Queen's Medical Center, both located in Honolulu, Hawaii.

TES was performed under general anesthesia with double lung ventilation. In a supine position, the right lung is collapsed to allow access to the sympathetic ganglia as they pass across the vertebral bodies. Two 1 cm incisions are placed in the second and third intercostal spaces, just behind the anterior axillary fold. Through these incisions and utilizing a thoracoscope, the sympathetic chain and ganglia are identified and divided from the top of the second rib to the fourth rib. The ganglia are submitted to pathology for confirmation of nerve tissue. The lung is reexpanded and the chest closed without a chest tube. This procedure is then repeated on the contralateral side.

The Short Form-36 (SF-36) was administered to determine pre and postoperative health status. Results of the SF-36 were categorized into 8 scales evaluating physical functioning, role-physical, bodily pain, general health, vitality, social functioning, role-emotional, and mental health.[8] Some items' responses were reversed to indicate a higher score reflecting better health or more pain.[9] Scores for each scale were totaled and scaled to 100. Significant differences were assessed by one-tailed t-test. Patients were also asked to evaluate the severity of their symptoms before and after surgery, and any compensatory hyperhydrosis (none, mild, moderate, or severe).

Overall satisfaction with the procedure on a scale of 0→100 was assessed.

Results

From January 1999 to May 2000, eight patients (five women and three men), average age of 27.4 years, range 15 to 41 years, were treated by TES. Morbidity was minimal. Operative blood loss was less than 100ml and no blood transfusions were required for any patient. Length of hospital stay was less than one day in all cases except one. This patient remained hospitalized for four days for pleuritic pain. There were no incidences of Horner's syndrome. All patients reported immediate alleviation of preoperative symptoms after surgery. While three patients indicated moderate palmar symptoms and five reported severe palmar symptoms before TES, all indicated complete lack of any hyperhydrosis in their palms after surgery.

Follow up evaluation occurred after a mean of 7.0 months (range of 1.2 to 15.8 months). All patients reported absence of any recurrent symptoms in their palms. However, all had developed moderate compensatory hyperhydrosis symptoms in the truncal region, with two patients noting hyperhydrosis symptoms in the feet of moderate severity, which had begun within the first week after surgery.

Evaluation of the SF-36 showed no significant changes in the physical functioning, general health, vitality, or role-emotional scales. There were significant improvements in social functioning ($p< 0.005$), mental health ($p< 0.049$), and role-physical ($p<0.020$) dimensions of the SF-36. In addition to the significant improvement in these areas, the bodily pain scale was increased as well ($p< 0.012$) (Fig. 1). Composite SF-36 scores reflected an overall improvement in health of 8% ($p<0.043$, Fig. 2). All patients viewed the surgery as worthwhile. There was an 89.25% overall satisfaction rating.

Discussion

We have demonstrated significant improvement in the palmar hyperhydrosis symptoms of all patients undergoing TES, accompanied with a lack of significant postoperative morbidity and short hospital stays. These results support the efficacy of TES in our experience.[3-7]

Compensatory hyperhydrosis was reported in all cases, as all patients indicated moderate compensatory hyperhydrosis symptoms in the trunk and two in the feet. However, these compensatory symptoms appear to be of little concern to the patients. The complete alleviation of palmar symptoms with significant improvements in social functioning, mental health, and role-physical dimensions as well as the high overall satisfaction rating is consistent with this assertion.

The SF-36 has been an accepted form for assessment of overall health in the United States and overseas.[10,11] Patients scored well in most of the physical scales when evaluating their health prior to surgery and had little room to improve as a result of the surgery. Nevertheless, the composite overall improvement in quality of life by TES was striking, and significant (Fig. 2). However, patients did indicate increased levels of bodily pain after TES. Their symptoms were described as burning sensations in the arms and pleuritic pain, but these symptoms were all short lived and related to the surgery. Despite being thoracoscopic in approach and thus minimally invasive, some bodily pain is to be expected. Since palmar hyperhydrosis is associated with social withdrawal, alleviation of the palmar symptoms by TES resulted in improvements in the social functioning, mental health, and role-physical scales. Improvements in their palmar symptoms allowed the patients to interact with people with more confidence, increase their physical productivity, and enhance their overall quality of life.

Continues on p. 137

Figure 1.—Average improvements in social functioning (SF, $p<0.005$), mental health (MH, $p<0.049$), role-physical (RP, $p<0.020$), and bodily pain (BP, $p<0.012$) after TES treatment.

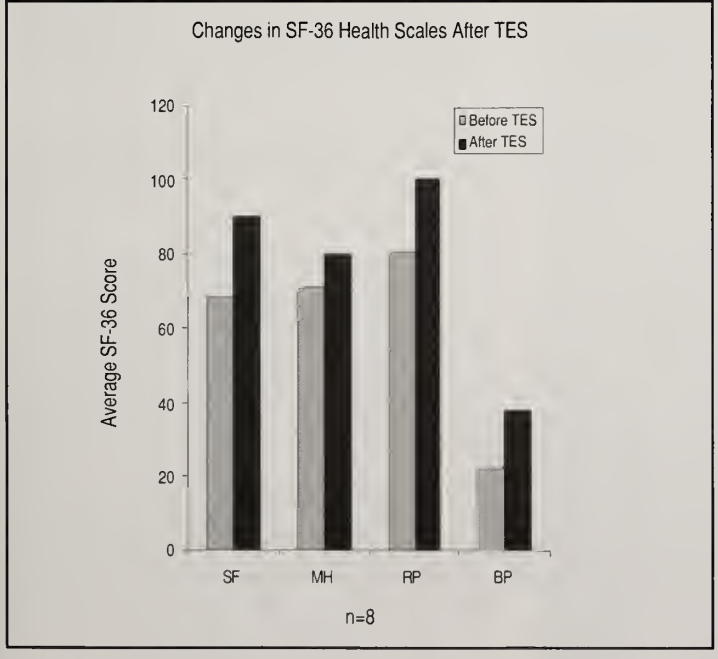
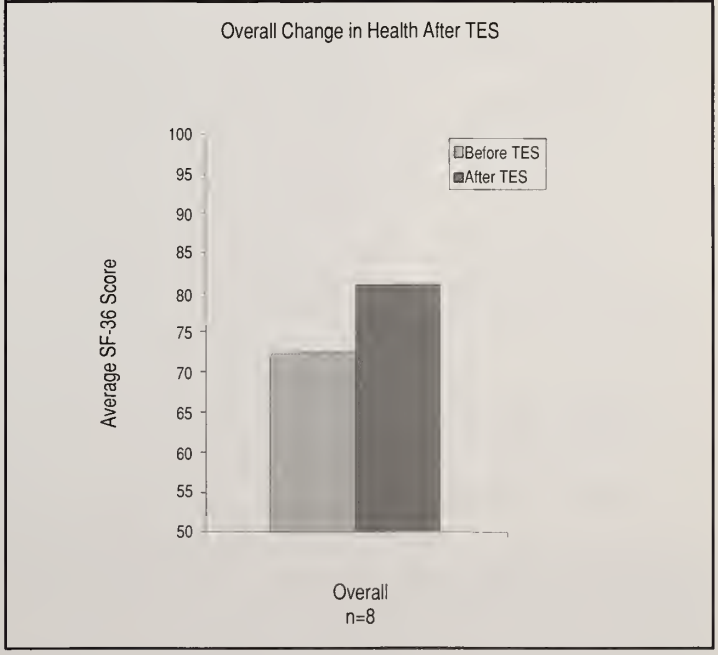


Figure 2.— Improvement in overall quality of life based on composite SF-36 score ($p<0.043$).



Cancer Research Center Hotline

Skin Cancer Prevention Research Receives National Award

Karen Glanz, PhD, MPH
Professor, Prevention and Control Program
Cancer Research Center of Hawaii,
University of Hawaii

Skin cancer is the most common form of cancer in the United States, and rates of skin cancer have increased dramatically over the past two decades.[1,2] Hawaii's southern latitude and year-round outdoor activities contribute to the risk of skin cancer for the State's residents. Even though it is common, most skin cancers can be prevented by reducing sun exposure. Given these facts, skin cancer prevention research has been a major focus in the Prevention and Control Program at the Cancer Research Center of Hawaii. Skin cancer prevention research at the Cancer Research Center has received support from federal and other sources in excess of $3 million since 1994 to investigate and improve methods and strategies for skin cancer prevention.

Recently, *Pool Cool*, a major skin cancer prevention research project at the Cancer Research Center of Hawaii, was given the prestigious 2000 Award for Excellence in Education from the American Academy of Dermatology in the category of an innovative, coordinated program directed toward public education. The award was given at the annual meeting of the American Academy of Dermatology in Washington, D.C. in March 2001. The *Pool Cool* project is directed by Dr. Karen Glanz, a behavioral scientist, and is especially designed to promote skin cancer prevention at swimming pools. It was funded by a grant from the U.S. Centers for Disease Prevention and Control and conducted in collaboration with Alan Geller, R.N., M.P.H. at Boston University School of Medicine. The *Pool Cool* study was nominated for the award by Dr. Norman Goldstein, editor of the Hawaii Medical Journal and clinical professor of dermatology at the John A. Burns School of Medicine.

The *Pool Cool* skin cancer prevention program is a multi-component educational and environmental intervention that was systematically developed, pilot tested, and evaluated in a randomized trial at 28 swimming pools in Hawaii and Massachusetts. The audience is 5 to 10-year-old children, their parents, and lifeguards. The evaluation of *Pool Cool* used surveys completed by 1,010 parents at baseline and 842 parents at follow-up; and 220 aquatics staff at baseline and 194 at follow-up. Multivariate analyses showed significant positive changes in children's use of sunscreen and shade, overall sun protection habits, and fewer sunburns; and improvements in parents' hat use, sun protection habits, and reported sun protection policies. Surveys from the experimental group reported a 23% reduction in children's sunburns compared to the preceding summer, while the control group reported only a 1% reduction ($p=0.04$). A dose-response trend was found for exposure to *Pool Cool* lessons and activities. Observations indicated that there were favorable changes in availability of sunscreen, sun safety signage, and use of shirts by lifeguards. In summary, the *Pool Cool* program had significant positive effects on several sun protection behaviors and in sun-safe environments at swimming pools, and reduced sunburns among lifeguards/aquatic instructors, in two ethnically and geographically distinct audiences.[3] A pilot dissemination project at 186 pools in the United States and Canada demonstrated the acceptability and feasibility of *Pool Cool* in diverse settings, and a proposal for a national diffusion trial is under review at the National Cancer Institute.

The *Pool Cool* project represents an extension and adaptation of an earlier research project in outdoor recreation settings entitled *SunSmart*. The *Hawaii SunSmart* program began in 1994 with support from the Centers for Disease Prevention and Control and the Hawaii Department of Health. *SunSmart* was evaluated in a three-arm randomized controlled trial conducted at 14 recreation ("Summer Fun") sites on the island of Oahu. The program was for children aged 6 to 8 years at the sites, their parents, and recreation leaders. Sites in the education arm received staff training, on-site activities, and interactive take-home booklets. Sites in the education plus environment/policy arm received the education components plus sunscreen, portable shade tents, and policy consultations. Materials and methods were developed and selected using a social marketing process that included formative research with 216 children, 15 parents, and 25 recreation staff.[4] The process and short-term impact of the *SunSmart* program were evaluated through pre- and post-test surveys of parents and recreation staff, monitoring, and on-site observations. Results of a pilot study intervention showed short-term improvements in knowledge; sun protection habits of parents, children, and staff; readiness to change; sun protection policies; and sun protection norms.[5] The efficacy trial included 756 parents and their children, and 176 staff. Results showed that the two intervention conditions—both the educational arm and the education plus environment/policy arm—yielded improvements in sun protection practices in parents, their children, and Summer Fun staff .[6,7] The intervention also led to improved knowledge, more positive norms for prevention among staff, and a substantial increase in reported sun protection programs and policies in sites with the *SunSmart* program. Program implementation was high, children responded enthusiastically to *SunSmart*, and favorable changes were sustained into the fall.

Another research project at the Cancer Research Center evaluates tailored skin cancer prevention strategies in persons at moderate and high risk. This project is entitled "SCAPE" (Skin Cancer Awareness, Prevention and Education) and is funded by the National Cancer Institute. The aims of this study are to evaluate the impact of mailed tailored (i.e., personalized) interventions including risk feedback, on the skin cancer prevention and skin self-examination behaviors of high-risk and moderate-risk adults and children in grades one through three. The study will also evaluate tailored interventions in two geographically and ethnically different regions and refine skin cancer risk assessment methodologies.[8] Project SCAPE , a two-site study being conducted in Hawaii and on Long Island, is now in its third year. To date, a two-year trial among adults (n=725) and children (n=136) has been completed. The results of the first year of the adult trial showed a high rate of study completion

Continues on p. 135

"Editorial," continued from p. 122

Topical Antiperspirants

Antiperspirants, usually applied to the axillae, may also work on the palms. While these products help to varying degrees from most published studies dealing with sweating of the axillae, a trial of a product like Procter & Gamble's Secret Platinum Protection might be considered. The efficacy of topical antiperspirants drug systems reported by the U.S. Food and Drug Administrations OTC Antiperspirants Review Panel ranged from 14 - 70% for axillary sweating.[1] Palmar sweating was not studied.

Many OTC products contain aluminum chlorhydroxide. Some, like Certain Dri, contain aluminum chloride. Prescription products include Drysol which is a 20% aluminum chloride solution in alcohol. Glutaraldehyde and formaldehyde have also been used.

Electric devices

A home iontophoresis Dryonic is available by prescription from General Medical Corp, Los Angeles, California. This is a battery device supplying galvanic current to the palms, soles or axillae.[2]

Oral medications

Over the years many oral preparations have been used. Anticholinergics such as Pro-Banthine, liquid forms of atropine such as tincture of belladonna, and various tranquilizer/anticholinergics such as Atarax have been used with varied results.

Injection Therapy

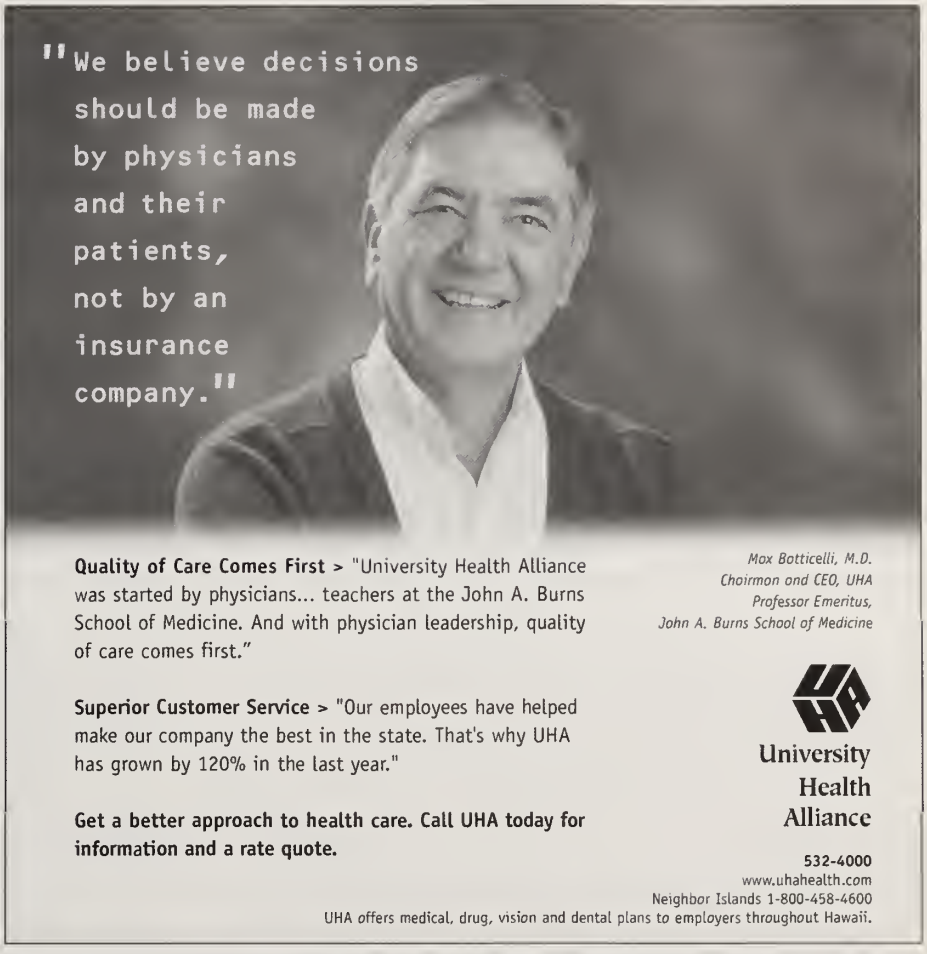
There has been some recent interest in Botulinum toxin (Botox) injections for hyperhidrosis.[3] Multiple Botox injections into the palms are required. Problems include pain and burning , weakness of small hand muscles and short duration of effect. This is an off-label use of Botox.

Surgical procedures

Excision of axillary sweat glands has also been done, but obviously not for palmar sweating. Dorsal sympathectomy has been a common procedure but because of complications including 50% regrowth of nerves is done less today.

For several years we had to refer patients to the mainland or to Sweden to obtain this surgery. Drott and associates in Boras, Sweden treated 850 patients and reported their findings in 1995.[4] With the worldwide general acceptance of transthoracic endoscopic sympathec-

Continued on p. 135



Quality of Care Comes First > "University Health Alliance was started by physicians... teachers at the John A. Burns School of Medicine. And with physician leadership, quality of care comes first."

Superior Customer Service > "Our employees have helped make our company the best in the state. That's why UHA has grown by 120% in the last year."

Get a better approach to health care. Call UHA today for information and a rate quote.

Max Botticelli, M.D.
Chairman and CEO, UHA
Professor Emeritus,
John A. Burns School of Medicine

University Health Alliance

532-4000
www.uhahealth.com
Neighbor Islands 1-800-458-4600
UHA offers medical, drug, vision and dental plans to employers throughout Hawaii.



There is a time in life when we start to understand ***what really matters.***

Helping people with terminal illness, their families and loved ones live every day at home.

924-9255

www.hospicehawaii.org

HOSPICE HAWAII

News and Notes

Henry N. Yokoyama MD

Potpourri I

A 92 year old man went to see his doctor for a physical... A few days later, the doctor saw the man walking down the street with a beautiful young woman on his arm. The following week, the old man went back to get his test results...

You're really doing great aren't you?" the doctor said.

"Just following orders, doctor. Like you said, "Get a "hot mama" and be cheerful."

"I didn't say that," the doctor announced. "I said you have a heart murmur so be careful."

— — — — — — — —

A woman and her husband interrupted their vacation to see a doctor... The woman said, "I want this boil lanced right away and I don't want an anesthetic because I'm in a big hurry."

The doctor was impressed, "You are certainly brave," he said, "Where is the boil."

The woman turned to her husband and said, "Show the doctor your boil dear."

— — — — — — — —

An elderly woman went to see her doctor... When the doctor asked why she was there, the woman replied, "I'd like some birth control pills."

"Because they help me sleep."

"How do they help you sleep better?" asked the doctor...

"I put them in my granddaughter's orange juice and I sleep like a baby."

— — — — — — — —

Made you Smile

Our local dermatologist is known for her "no nonsense" approach in consultations. One of my patients told me how he'd "made her day."

He was sent to her for a mysterious genital rash. She asked him to remove his shorts as she looked around for a piece of equipment.

As she turned again to face him, my patient blurted out, "Doc, please don't tell my friends that you needed a magnifying glass just to find my penis."

He swears that he actually saw her smile...

Dr. Bernard T.

— — — — — — — —

Flu Like Symptoms

In 1952 I was a GP...A mother came to me during an influenza epidemic (a nasty strain that caused nausea and vomiting). The daughter was a pretty 14 year old who was complaining of symptoms similar to the flu.

After questioning and examining her, I told her that it was a temporary illness and should go away on its own.

Three months later, the two returned. The daughter with a sway back posture and protrubent abdomen. I exclaimed, "You're pregnant."

The daughter remained placid and said nothing, evidently not surprised.

The mother was furious and started yelling at me that on the first visit I'd made the wrong diagnosis... She screamed, "I'm going to see a lawyer!" and stormed out of my office. I never heard from her again. Maybe the lawyer delivered the baby, I just don't know.

Dr. Allan Morton

— — — — — — — —

A senatorial candidate felt it would be best for his political future if he showed an interest in Native Americans... He visited a Navajo tribe and gave an impassioned speech. The Navajo listened and shouted with fervor "Ungah!" "Ungah!"

The candidate came to a perspiring and breathless halt amid repeated enthusiastic cries of "Ungah!"

The chief of the tribe stepped forward: "We are grateful for your interest in us... We wish to bestow you a gift..." "In yonder corral are the tribal horses." "Go choose one, but be careful not to step on the piles of UNGAH."

— — — — — — — —

The astronaut was asked what he thought of just before take off... He said, "I think that I'm sitting on a complex device made up of 7,000 separate parts, each manufactured by the lowest bidder."

A big burly fellow got into one of those compartments they have on British trains. The only other occupant was a thin weedy little fellow...

The big man pulled out a large black cigar and said in a gruff voice, "I suppose you wouldn't mind if I light my cigar."

"Not at all," said the thin little man, "provided you won't mind if I throw up."

Quotable Quotes I

A well person is a patient who has not been completely worked up...

J. Freymann

General practitioners are never right, but may on occasion, not be wrong... "It was dry when we closed..."

Anonymous

Shunway's Law: "Bleeding always stops..."

A motto for hypochondriasis... There is no such thing as "just a rash."

Laboiwitz

Rules for Primary Care:

Patients get better after they call for an appointment...
If a spouse accompanies a patient, the visit will take twice as long...
There's always a virus going around...
Five o'clock patients are always late...
Minor complications always happen to other doctors' patients...

Quotable Quotes II

A generalist is someone who learns less and less about more and more until he knows nothing about everything...

A specialist is someone who learns more and more about less and less until he knows everything about nothing...

Anonymous

Varicose veins are the results of improper selection of grand parents...

William Osler

Ratner's Law: Beepers work better if you turn them on.

Thomas Sydenhome

Bennett's Axiom on lab tests: "If you get a lab test to reassure a patient, the results will always be abnormal...
Corollary No. 1: Unexpected lab results will not correct themselves no matter how often you look at the chart...

To err is human. To forgive is against departmental policy...

A drug is a substance that when given to a patient produces the side effect you forgot to mention...

Howard Bennett

After two days in the hospital, I took a turn for the nurse...

W.C. Fields

Bock's Law: "I pee therefore I am."

Microbes will always have the last say.

Louis Pasteur

There are three developmental stages in adolescence... Puberche, menarche, and anarchy...

Howard Bennett

It's unfair to believe everything we hear about lawyers... Some of it may be true.

FIVE WAYS TO DIE ON THE GOLF COURSE:

1. Hit by a golf ball.
2. Run over by a golf cart.
3. Whacked by a golf club.
4. Struck by lightning.
5. Forgot your hat.

Surprisingly, one million new cases of skin cancer are detected every year. One person an hour in the U.S. dies from melanoma, the deadliest form of skin cancer. If you spend a lot of time in the sun, you should protect yourself. One out of five Americans develops skin cancer during their lifetime. Don't be one of them. Stay out of the midday sun. Cover up. Wear a hat. Seek shade. And use sunscreen. For more information on how to protect yourself from skin cancer, call 1-888-462-DERM or visit www.aad.org.

AAD 1938 AMERICAN ACADEMY OF DERMATOLOGY

AMERICAN ACADEMY OF DERMATOLOGY

Why should your life's work be ruined by the cost of long term care?



Call
Long Term Care Insurance Expert,
Charles Hong
Now.
Phone: 292-5585 / Pager: 289-1234

We bring good things to life.

Insurance products underwritten by General Electric Capital Assurance Company.

If you don't think anyone would hire you to manage their investments, why are you managing your own?

Investment Consulting Services

If you are an individual investor or the administrator of a trust or employee benefit plan with assets of $100,000 or more, Morgan Stanley Dean Witter believes you deserve special attention.

Through our Investment Consulting Services department, you have access to the professional knowledge and experience of independent investment managers, affording you the same benefits that large institutional investors have enjoyed for many years.

To learn more about the consulting services we offer, please call:

Gwen Pacarro, CIMA
Sr. Vice President, Financial Advisor

Gary Pacarro
Financial Advisor

Pacific Tower, Suite 1600
1001 Bishop Street
Honolulu, HI 96813
(808) 525-6048

MORGAN STANLEY DEAN WITTER

Morgan Stanley Dean Witter is a service mark of Morgan Stanley Dean Witter & Co. and services are offered through Dean Witter Reynolds Inc., member SIPC. © 2000 Dean Witter Reynolds Inc.

You can't make an asymptomatic patient better...

Anonymous

Med Tid Bits

Feel No Pain (New rules for treating pain at hospitals and other facilities)

Starting January 1, medical facilities have to show that they meet certain standards for assessment and treatment of pain in all their patients. Failure to meet the standards (which were jointly developed with the University of Wisconsin Medical School could lead to a financially devastating loss of the right to treat Medicare and Medicaid patients)

New requirements: all patients have the right to have their pain assessed and managed appropriately; medical facilities must ask their patients to rate their level of pain and the results documented.

To Patients: Don't suffer in silence (Surveys have shown that many patients don't tell doctors or nurses about their pain...)
Plan Ahead: Find out what the options for pain are before surgery.
Feed Back: If the current treatment isn't controlling the pain, say so...
Bone up: Learn what pain killers can and can't do...
"No one can begin to help you until you say where and how much it hurts"

(Kathleen Folley, attending neurologist at Sloan Kettering Cancer Center)

— — — — — — — —

Antioxidants in Beer

Researchers have found potent antioxidants flavonoids in beer hops (more so than in red wine).

— — — — — — — —

Glowing Gray Matter

A special MRI shows that asymptomatic patients who are at genetic risk for Alzheimer's work harder to answer easy mental tests. This finding may be used as a mental stress test for Alzheimers (like the treadmill test for heart disease)

— — — — — — — —

Going All the Way

Sigmoidoscopy for colon cancer misses 1/2 the precancerous polyps spotted by the more costly colonoscopy. Folks over 50 should consider colonoscopy ($1,000 to $1,500) vs $200 for a sigmoidoscopy...

— — — — — — — —

Rapid PCR

40% of pregnant women harbor strep which can cause pneumonia, septicemia and meningitis in the new born. Screening for strep with the new Rapid PCR can be done in less than one hour...

— — — — — — — —

In October last year, the FDA approved the sale of RU 486 (Mifepristone). Any medical practitioner can provide the two drug regimen provided they have surgical back up, if it fails to end the pregnancy or there are side effects...

Surveys show that 65% of people accept a first trimester pregnancy, but 65% oppose anything after that...

For the general population, the pill is an option, but not an easy one. It is not likely to be less expensive then surgical abortion, given the number of doctor's visits and the cost of the pills...

— — — — — — — —

Fruity Set Back

A report that pooled the results of eight studies involving 350,000 women found no evidence that eating the most promising veggies (such as broccoli, kale and carrots) lowers women's risk of breast cancer...

— — — — — — — —

Sleeping Sickness

A study finds that snoring sleepy heads are twice as likely to suffer a stroke as ordinary snoozers...

— — — — — — — —

Fill 'Er up

Shortness of breath during exercise is a classic symptom of congestive heart failure. Now a study shows that in half of all these patients, their hearts don't fill up properly — especially in hypertensive women over age 65...

It took a study of 62,000 patients to confirm what cardiologists already suspected; that in heart attacks, angioplasties save more lives than clot busting drugs... (Survival is 40% lower after emergency angioplasty, than after a round of clot busters)

— — — — — — — —

The Pressure's On

In September last year, a 5 year study reported that calcium channel blockers were responsible for 85,000 avoidable heart attacks and heart failures (CCB's were introduced 20 years ago and 28 million people including 12.7 million in the U.S. are on CCB's)

A September report at a Amsterdam meeting of the European Cardiology Society reviewed studies of 27,000 patients in 9 clinical trials and found that the risk of heart attacks was 27% greater and the risk of heart failure 25% with CCB's.

The safer drugs were diuretics, beta blockers, ACE inhibitors (especially in diabetic kidney disease or CHF). Alpha blockers were being widely prescribed, but a report earlier this year also found Alpha blockers increase the risk of heart attacks...

— — — — — — — —

Breathing Uneasy

Nasal strips athletes use to boost performance are no better than placebo in changing O_2 uptake or improving endurance...

— — — — — — — —

Alzheimer's Swift Test?

Patients with memory problems were asked to scratch and sniff odor patches and to identify the scent... In a two year follow up, those who could accurately distinquish peanut from pizza developed less Alzheimers, but one half of those who scored poorly went on to develop Alzheimers...

Visiting Professor, HE Paulus, UCLA, Lectured February 16, 2001 at QMC, Kam Auditorium "Crystal-induced Arthritis Diagnosis and Long-term Management"

Crystal-induced Arthritis

- Monosodium Urate: Gout
- Calcium pyrophosphate dihydrate (CPPD): Pseudogout
- Basic Calcium phosphate: present in 30-60% of osteoarthritis joints
- Basic Calcium phosphate: "Milwaukee shoulder"
- Basic Calcium phosphate: tendonitis, bursitis, tissue deposits

Criterion for Acute Gouty Arthritis

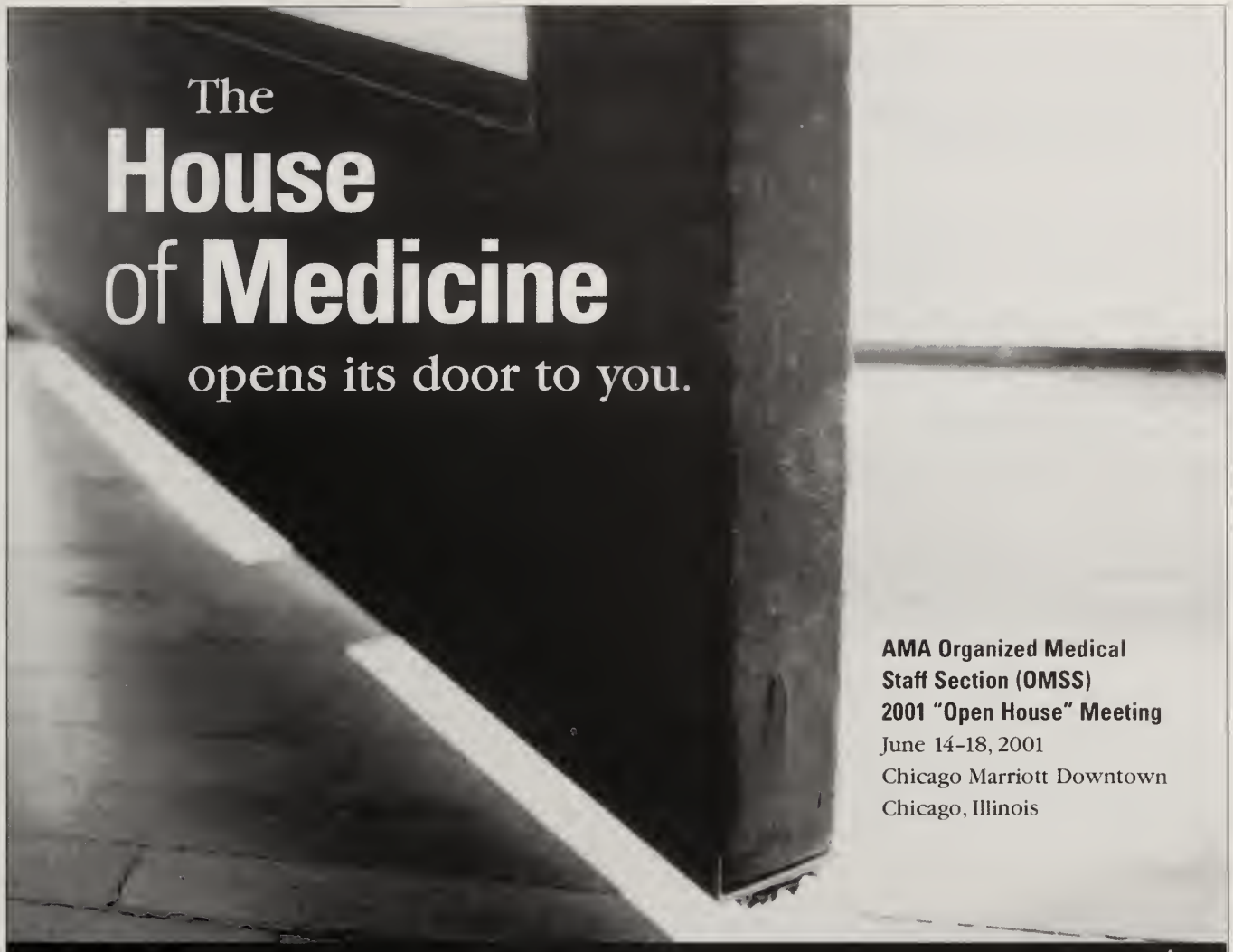
– Wallace, et al. *Arthritis Rheum* 1977;20:895-900
A. Characteristic urate crystals in joint fluid or
B. Tophus proven to contain urate crystals or
C. Six or more of 12 suggestive findings

12 Findings Suggestive of Gout

1. >1 attack of acute arthritis
2. Maximal inflam within 1 day
3. Monarticular arthritis
4. Joint redness
5. 1st MTP pain or swelling
6. Unilateral attack of 1st MTP
7. Unilateral attack of tarsal joint
8. Suspected tophus
9. Hyperuricemia
10. Subcortical cysts without erosions
11. Asymmetric joint swelling (x-ray)
12. Negative synovial fluid culture

Acute Gout

- Common cause of acute monoarthritis in men and post menopausal women
- 13.6/1000 men, 6.4/1000 women – awakened with severe pain great toe, spreads to dorsum of foot, heel, ankle or tarsals
  - may have chills, slight fever
  - very painful, even to light touch
  - redness, swelling, heat ("cellulitis")
- Improve over 3 - 10 days; may desquamate overlying skin



AMA Organized Medical Staff Section (OMSS) 2001 "Open House" Meeting
June 14-18, 2001
Chicago Marriott Downtown
Chicago, Illinois

Step up. Speak out. **Take a stand for positive change.**

The American Medical Association Organized Medical Staff Section will open its door to all physicians — regardless of practice affiliation or membership status — at a unique "Open House" Meeting, June 14-18, 2001 in Chicago.

Your advocate for positive change.
The AMA wants to help you overcome the incredible challenges you face. Reduce onerous regulations and managed care demands. Protect your autonomy and patient relationships. Ensure appropriate reimbursement. Make sure no one treats physicians like commodities.

Your place to speak up.
To help unify the AMA and the nation's front-line physicians, this very special meeting offers you a direct avenue for raising your issues and concerns, and proposing solutions.

Your opportunity to act.
The AMA will open the door. It's up to you to step through. And because your participation is so important, there's no fee. Just sign up and attend. For more information, call **800 262-3211.**

Register today online at www.ama-assn.org/omss

American Medical Association
Physicians dedicated to the health of America

Acute Gout
- Monosodium urate crystals establish Dx
- Synovial fluid WBC 20,000 - 100,000/mm^3, mostly polys
- Negative cultures
- Serum uric acid may be normal during attack
  – elevated at some time, so recheck it
- X-rays negative during initial attacks

Intercritical Gout
- "Asymptomatic" interval between attacks
- Urate crystals may persist in previously inflamed joints
- Serum uric acid high
- 24 hour urine uric acid >750 mg = overproduction
- If untreated, acute attacks occur with increasing frequency

Chronic Tophaceous Gout
- Joint pain and swelling persist during the intercritical intervals
- Becomes polyarticular - confuse with nodular RA
- Takes 10 years to develop tophi
- Nodular deposits of monosodium urate crystals in olecranon bursa, subcutaneous over bones or joints, in patellar or Achilles tendon, helix of ear. Also in synovium and subchondral bone

Pathogenesis of Gout
- Purine metabolism →uric acid; humans lack uricase
- Monosodium urate crystallizes in oversaturated joint tissues
- Plasma solubility of urate = 6.7 mg/dl at 37°C (uricase method; 7.5 - 8 by autoanalysis)
- Solubility decreased by acid pH; increased by binding to plasma proteins

Pathogenesis of Gouty Arthritis
- Urate crystals shed into synovial fluid
- Urate crystals stimulate release of inflammatory mediators from phagocytes and synovial cells. IL-1, IL-6, TNFα, IL-8, etc.
- Influx of neutrophils →magnify the response
- Classic acute inflammation: pain, swelling, redness, heat, loss of function

Pathogenesis of Gout
- Hyperuricemia due to:
  1) Overproduction (10%):
     a) Hypoxanthine-guanine phosphorilbosyl transferase (HGPRT ase) deficiency in Lesh-Nyhan syndrome or genetic partial deficiency
     b) leukemia/lymphoma, or malignancies during chemotherapy
     c) psoriasis
  2) Uric acid under-excretion: ↓renal function, acidosis, dehydration, diuretics, low-dose salicylates, cyclosporine, lead nephopathy, alcohol abuse, starvation

note: ↑uric acid in 5% of normals; only <25% develop gout

Management of Joint and Tissue Deposits of Urate: Uricosuric Therapy
- ↑Urate excretion by kidney
- Probenecid 0.5 g/d →1.0 g bid (occ. rash or GI upset)
  – need good urine flow (2L/d; GRF >50ml/min; no renal stones; no salicylates
- Sulfinpyazone 100 mg →800 mg/d (gastric irritation 5%; rare cytopenia)

Probenecid
- Interferes with post secretory reabsorbption of uric acid by renal tubule, increasing uric acid excretion by 50% to 70%
  – competes with other organic acids for secretion and resorption
- Ineffective if creatinine clearance <20 ml/min; ↑doses if <50 ml/min
- Doses 500 mg to 2000 mg/day; monitor with serum uric acid
- Half-life 4 to 12 hours; should dose bid
- Mostly metabolized in liver

Probenecid Side Effects
- Rash or hives with fever: 1% to 5%
- GI intolerance: 3% to 8%
- Kidney stones 1% to 9%
- Precipitate acute arthritis - up to 10% (↓by starting low doses, with colchicine prophylaxis)
- Drug interactions: decreases renal (and biliary) excretion of penicillin, indomethacin, NSAIDs, diuretics, other weak acids, MTX and oxypurinol

Management of Tissue Deposits of Urate: Allopurinol Therapy
- Xanthine oxidase + (Hypoxanthine or xanthine) →Uric Acid
- Allopurinol inhibits xanthine oxidase →↓urate production
- Dose 100 mg to 300 mg q. day; monitor serum urate
- Preferred if renal insufficiency, urate overproduction, tophi or urate renal stones
  – but ↓dose if GFR <50 ml/min, for thiazide diuretics, and in elderly

Allopurinol Metabolism
- Oxypurinal - active metabolite; half-life 18 to 33 hours
- Excreted in urine; uricosuric drugs increase allopurinol clearance 2 to 3 fold
- ↑dose if used with probenecid (also note: probenecid half-life increased 50% by allopurinol)
- ↓axathiorine and 6 MP doses by 75% if given with allopurinol

Allopurinol Toxicity
- Rashes in 3% - 10%; dyspepsia, headache, diarrhea, rare fever, urticaria, eosinophilia, interstital nephritis, acute renal failure
- Rare hypersensitivity with toxic epidermal necrolysis
  – 20 - 30% fatal
  – may try oxypurinol
  – may try desensitization

Crystal-induced Arthritis
- Monosodium Urate: Gout
- Calcium pyrophosphate dihydrate (CPPD): Pseudogout
- Basic Calcium phosphate: present in 30-60% of osteoarthritis joints
- Basic Calcium phosphate: "Milwaukee shoulder"
- Basic Calcium phosphate: tendonitis, bursitis, tissue deposits

Pseudogout
- Acute attacks of arthritis - knees or other large joints
- Chronic multiple joint arthritis of knee, hip wrist, MCPs, elbow, shoulders, especially if associated with acute exacerbations
  – may misdiagnose as RA (a.m. stiff, fatigue, ↑ESR, symmetric joint swelling, contractures
- 50% have progressive degeneration of joints

Criteria for Pseudogout (CPDD crystal disease)
– Ryan, Primer on Rheumatic Diseases 1997
- Characteristic CPPD crystals in synovial fluid
  – rod or rhomboid shaped (intercellular)
  – little or no positive birefringence
- Typical radiographic chondrocalcinosis
  – articular cartilage or meniscis (knee, hip)
  – fibrocartilage of symphysis pubis
  – triangular cartilage of the wrist

Basic Calcium Phosphate Crytals and Osteoarthritis
- Acute synovitis of OA may be associated with calcium crystals. ex - acute ruptured popliteal cyst with pseudophlebitis
- Erosive arthritis in OA joints maybe associated with calcium crystals. ex - Milwaukee shoulder, MCP 2,3
- 30% - 60% OA synovial fluids contain apatite crystals

Milwaukee Shoulder
- shoulder pain and disability in elderly woman
- large cool effusion
- destruction of rotator cuff
- radiographic destruction of both sides of glenhumeral joint
- no osteophyte
- synovial fluid blood stained, few mononuclear cells, numerous calcium apatite aggretates
- may occasionally occur in knee, hip, other sites

Suppression of Acute Crystal-induced Inflammation
- NSAID: Indomethacin 50-100 mg initially, then 50 mg q 6 hr; Naproxen

500-1000 mg initially, then 500 mg q 8 hr
- ACTH 40 units IM q 6-12 hours
- Prednisone 20-40 mg daily or equivalent IM or IV

Suppression of Crystal-induced Inflammation
- Joint aspiration or lavage and injection of corticosteroid
- IV colchicine 1 mg in 20 ml normal saline over 10-20 minutes; may repeat once. Do not infiltrate. Avoid if renal or hepatic failure.

Prevention of Intercritical Gouty Attacks
- After initial response, doses can be tapered off over 7-10 days
- Then maintain on prophylactic colchicine 0.6 mg once or twice a day to prevent recurrent attacks
- If colchicine not tolerated, may use an NSAID
- Decreases frequency of gouty attacks about 50%

Colchicine Prophylaxis for Pseudogout
– Bowles et al. *Arthritis Rheum* 1986;29:S-36

- Randomized, 1 year study

		Median Attacks/year	
	N	Pre-study	During Study
Colchicine 0.6 mg b.i.d.	10	6.5	0.5
Placebo	10	5.5	6.5

Colchicine
- Alkaloid extract of colchicum autumnale: meadow saffron
- Interferes with microtubules of neutrophils →↓motility, chemotaxis, and chemotactic factor release at therapeutic concentrations
- Higher concentrations arrest cell division →cytopenias
- Uniquely effective for acute gout

Colchicine Metabolism
- Rapidly absorbed; to 50% protein bound;
- Concentrates in leukocytes; binds to tubulin
- Plasma half-life 20 min, but present in leukocytes for 2 to 3 days and still measurable 10 days later
- Excreted in bile, feces and urine

Colchicine Toxicity
- Minimal with usual doses of 0.6 to 1.2 mg daily
- D, abdominal cramping, N, V: common with oral dosing
- Chronic higher doses: cytopenias, peripheral neuritis, hair loss, amenorrhea, oligospermia, myopathy
- Overdoses: severe hemorrhagic gastroenteritis, renal failure, hepatic failure, seizures
- Fatal doses as low as 7 mg; >40 mg usually fatal

Frequent Mistakes in Management of Gout
- Forget to aspirate joint or tophus to establish Dx
- Forget to treat both inflammation and hyperuricemia
  - NSAIDs and colchicine have no effect on serum or tissue urates
  - Allopurinol and probencid are not analgesic or antiinflammatory
- Forget that successful treatment must continue forever
- Confuse chronic polyarticular tophaceous gout with RA

Corrections to the February issue

The following two references to "*Barriers to Good End-of-life Care: A Physician Survey*," by Reiko Kayashima MPH and Kathryn L. Braun DrPH, (pp. 40-44 and p.47) were mistakenly omitted.

30. Lynn J, Arkes HR, Stevens M, Cohn F, Koenig B, Fox E, et al. Rethinking fundamental assumptions: SUPPORT, Implications for future reform. *J Am Geriatr Soc* 2000;48:s214-21.

31. Sullivan MD, Ganzini L, Stuart JY. Should psychiatrists serve as gatekeepers for physician-assisted suicide? *Hastings Cent Rep* 1998;28:24-31.

"Cancer Research Center Hotline," continued from p. 128

(88%), that tailored materials were rated more favorably than standard materials, and that the tailored materials group reported improved sun protection habits ($p<.05$), greater perceived benefits of sun protection ($p<.05$), and trends toward improved knowledge, more adequate sunscreen application, and higher perceived risk for skin cancer.

The month of May includes observances of Skin Cancer Awareness Month and National Melanoma/Skin Cancer Prevention and Detection Month. The Hawaii Skin Cancer Coalition, a statewide organization of health professionals, agencies, and consumers provides increased public education on skin cancer prevention. Skin cancer prevention research will continue to be an area of particular emphasis at the Cancer Research Center of Hawaii. For more information, please visit the website of the Cancer Research Center of Hawaii (www.crch.org).

References

1. American Cancer Society. *Cancer Facts & Figures—2000.* Atlanta: American Cancer Society.
2. Jemal A, Devesa SS, Fears TR, Hartge P. Cancer surveillance series: Changing patterns of cutaneous malignant melanoma mortality rates among whites in the United States. *Journal of the National Cancer Institute* 92:811-818, 2000.
3. Geller A, Glanz K, Shigaki D, Isnec MR, Sun T, Maddock J. Impact of a skin cancer prevention program in aquatics settings: The *Pool Cool* program in Hawaii and Massachusetts. *Preventive Medicine*, 2001, in press.
4. Glanz K, Carbone E, Song V. Formative research for developing targeted skin cancer prevention programs for children in multiethnic Hawai'i. *Health Education Research*, 14:155-166, 1999.
5. Glanz K, Chang L, Song V, Silverio R, Muneoka L. Skin cancer prevention for children, parents, and caregivers: A field test of Hawaii's *SunSmart* Program. *Journal of the American Academy of Dermatology*, 38:413-417, 1998.
6. Glanz K, Lew RA, Song V, Murakami-Akatsuka L. Effects of a skin cancer prevention program in outdoor recreation settings: The Hawaii *SunSmart* Program. *Effective Clinical Practice*, 3:53-61, 2000.
7. Glanz K, Maddock J, Lew RA, Murakami-Akatsuka L. A randomized trial of the Hawaii *SunSmart* Program's impact on outdoor recreation staff. *Journal of the American Academy of Dermatology*, In Press, 2001.
8. Glanz K, Silverio R, Farmer A. Diary reveals sun protective practices. *The Skin Cancer Foundation Journal*, 14:27-28, 86, 1996. *Reprinted as* "Daily diary reveals sun protective practices" in *Primary Care and Cancer*, 17 (5):21-23, 1997.

"Editorial," continued from p. 129

tomy and its availability now a in Hawaii, our patients with severe sweaty palms have another effective treatment available.

Why "Watch the Wasabe"? Most people in Hawaii, and indeed around the world, now know to watch the Wasabe and not eat it all at once. In a letter to the editor "Horseradish Horrors: Sushi Syncope" in the Journal of the American Medical Association,[5] a 63-year-old man ate the whole (glob) of wasabe at his first Japanese meal and had vasomotor near-collapse. Among his many symptoms was severe diaphoresis not merely palmar hyperhidrosis

In summary, try conservative methods to treat your severe palmar sweating patients, but because it does impact positively on their quality of life consider referral for transthoracic endoscopic sympathectomy and... watch the wasabe.

References

1. Bates, B. Efficacy of Antiperspirants Delivery Systems in Novel Antiperspirants Treats Axiliary Hyperhidrosis. *Skin and All News* January 2000: 20.
2. Atkins Di, Melsenheimer JL. and Dobson RL. Efficacy of the Dryonic Unit in the Treatment of Hyperhidrosis. *J Am Acad Dermatol* 1987; 16: 828-832.
3. ShelleyWB ,TaiananNY and ShelleyED. Botulinum Toxin Therapy for Palmar Hyperhidrosis. *J Am Acad Dermatol* 1988; 38:227-229.
4. Drott C,Gottberg G,Claes. An Endoscopic Transthoracic Sympathectomy an Effective and Safe Method for the Treatment of Hyperhidrosis. *J Am Acad Dermatol* 1995; 33: 78-81.
5. Spitzer,DE. Letter to Editor: Horseradish Horrors: Sushi Syncope. *JAMA* 1988 Jan. 8; 259(2):218-219

"Medical School Hotline," continued from p. 124

the PACE program, 2 are in medical administration, 16 are in group practice, and 9 are in private practice. Because of the shortage of geriatricians, fellows are in great demand when they graduate and find good jobs at excellent salaries.

Future Directions: Leaders in geriatrics are now turning their attention towards increasing the education in geriatrics for all medical students and all residents. Since an increasing number and proportion of surgical patients are older and frail, it is important that residents in surgical subspecialties learn the principles of good geriatrics care.[3,7] Subspecialty fellowship programs are also starting to integrate geriatric principles into their training, and there are some joint fellowships, such as Oncology and Geriatrics, and in Geriatric Cardiology.[8,9] There is also significant interest from other disciplines for combined training, such as Gynecology and Geriatrics, and Orthopedics and Geriatrics. This trend is expected to continue, as graduates of these joint programs are essential.

In summary, the geriatrics fellowship program at JABSOM has grown and is one of the best and largest in the country. This has helped to improve clinical care of the elderly and teaching in geriatrics and has brought recognition for excellence to the school.

References:

1. Lubitz JD, Eggers PW, Gornick ME, Villafranca NP. Demography of Aging. Geriatrics Review Syllabus: A Core Curriculum in Geriatric Medicine, 4th ed. 1999; Dubuque, Iowa, Kendall/Hunt Publishing Company; Cobbs EL, Duthie EH, Murphy JB eds.; pages 1-5.
2. Health Trends in Hawaii: A Profile of the Health Care System. Published by the HMSA foundation, 4th edition, 1999.
3. The Interdisciplinary Leadership Group of the American Geriatrics Society Project to Increase Geriatrics Expertise in Surgical and Medical Specialties. A Statement of Principles: Toward Improved Care of Older Patients in Surgical and Medical Specialties. J Am Geriatr Soc 2000; 48:699-701.
4. Blanchette PL, Flynn B. Manpower Shortage in Geriatric Medicine, Generations, Spring Issue, 2001, in press.
5. Blanchette PL. The role of geriatrics in medical education at the University of Hawaii. Hawaii Med J 1995; 54(5):536-7.
6. American Geriatrics Society Education Committee. Guidelines for fellowship training in geriatrics. J Am Geriatr Soc 1998; 46(11):1473-7.
7. Solomon DH, Burton JR, Lundebjerg NE, Eisner J. The New Frontier: Increasing Geriatrics Expertise in Surgical and Medical Specialties.
8. Rich MW, Hazzard WR, Cheitlin MD, Alpert JS. Integration of geriatrics into cardiology fellowship training programs: a joint position paper from the American Geriatrics Society and the Society of Geriatric Cardiology. J Am Geriatr Soc 1998; 46(7):921.
9. Bennett JM, Sahasrabudhe DM, Hall WJ. Medical oncology and geriatric medicine: is it time for fellowship integration? Cancer 1997; 80(7):1351-3.

Schering/Key Pharmaceutical

Claritin-D 12 Hour
(5 mg loratadine/120 mg pseudoephedrine sulfate, USP)
Extended Release Tablets

Claritin-D 24 Hour
(10 mg loratadine/240 mg pseudoephedrine sulfate, USP)
Extended Release Tablets

Claritin RediTabs
10 mg (loratadine rapidly-disintegrating tablets)

Claritin Syrup
(loratadine) 10 mg per 10 mL

Once-a-day nasonex (mometasone furoate monohydrate) Nasal Spray, 50 mcg

Claritin 10 mg (loratadine)

Tequin gatifloxacin

Velvet Agena-Chee
Senior Sales Representative
Voice Mail (800) 782-2347
Box 3858

Donn keoki Arizumi
Pharmaceutical Representative
Voice Mail (800) 544-5420
Box 8058

Shawn Brady
Sales Representative
Telephone (808) 387-1409
Voice Mail (800) 554-5420
Box 1342
FAX (808) 373-1772
E-Mail shawn.brady@spcorp.com

Mark Buquoi
Sales Representative
Telephone (808) 384-3862
Voice Mail (800) 544-5420
Box 9795
FAX (808) 841-6105

Dennis M. Hamamura
Senior Pharmaceutical Rep.
Telephone (808) 671-0225
Voice Mail (800) 544-5420
Box 8774
FAX (808) 671-0817

Carol K. Honda
Sales Representative
Voice Mail (800) 554-5420
Box 8322
FAX (808) 593-1776

Rachelle Hyde
Sales Representative
District Trainer
Voice Mail (800) 782-2347
Box 3861

Caroline Perry
Sales Representative
Voice Mail (800) 554-5420
Box 1274
E-Mail Caroline.perry@spcorp.com

Brian Souza
District Account Representative
Telephone (808) 394-9475
Voice Mail (800) 554-5420
Box 6811
FAX (808) 394-9475
E-Mail brian.souza@spcorp.com

"Improvement of Quality of life..." continued from p. 127

Based on the results of this study, TES is an effective solution to relieve the symptoms of palmar hyperhydrosis. It allows the patients to improve their social confidence, mental health, physical capabilities and quality of life. Patients should be forewarned of likely compensatory symptoms and minor bodily pain as a result of the surgery, however overall satisfaction remains high enough for this treatment to continue to be recommended.

References

1. Adar R, Kurchin A, Zweig A, Mozes M, Palmar hyperhydrosis and its surgical treatment: a report of 100 cases. *Ann Surg* 1977; **186**: 34-41.
2. Moran KT, Brady MP. Surgical management of primary hyperhydrosis. *Br J Surg* 1991; **78**: 279-283.
3. Adams DCR, Wood SJ, Tulloh BR, Baird RN, Poskitt KR. Endoscopic transthoracic sympathectomy: experience in the South West of England. *Eur J Vasc Surg* 1992 6: 558-562.
4. Byrne J, Walsh TN, Hederman WP. Endoscopic transthoracic electrocautery of the sympathetic chain for palmar and axillary hyperhydrosis. *Br J Surg* 1990; **77**: 1046-1049.
5. Edmondson RA, Banerjee AK, Rennie JA. Endoscopic thransthoracic sympathectomy in the treatment of hyperhydrosis. *Ann Surg* 1992; **215**: 289-293.
6. Graham ANJ, Owens WA, McGuigan JA. Assessment of outcome after thoracoscopic sympathectomy for hyperhydrosis in a specialized unit. *J R Coll Surg Edinb* 1996; **41**: 160-163.
7. Kux M. Thoracic Endoscopic sympathectomy in palmar and axillary hyperhydrosis. *Arch Surg* 1978; **113**: 264-266.
8. Ware JE, Gandek B. Overview of the SF-36 health survey and the international quality of life assessment (IQOLA) project. *J Clin Epidemiol* 1998; **51**: 903-912.
9. Stewart AL, Hays RD, Ware JE. The MOS Short-form General Health Survey. *Medical Care*. 1988; **26**: 724-735.
10. McHorney CA, Ware JE, Raczek AE. The MOS 36-item short-form health survey (SF-36): II. Psychometric and clinical tests of validity in measuring physical and mental health constructs. *Med Care* 1993; **31**: 247-263.
11. Ware JE, Sherbourne CD. The MOS 36-item short-form health survey (SF-36): I. Conceptual framework and item selection. *Med Care* 1992; **30**: 473-783.

Classified Notices

To place a classified notice:

HMA members.–Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.

Nonmembers.–Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Locum Tenens

LOCUM TENENS– Board Certified FP available for summer Locum Tenens office coverage. Please call Vadim Braslavsky, MD (913) 685-7494 or visit www.concentric.net/~locumdr/1.htm.

Office Space

OFFICE SPACE– The Medical Corners in Kailua and Kapolei have extra space available. Full or part-time. 8am-8pm, 7 days a week. Perfect for start up or semi retirement. Contact Robert Sussman 266-3909.

Moonlighting

MOONLIGHTING?– Day, Evening and Weekend shifts available in rapidly expanding civilian clinic or military urgent care. Contact Robert Sussman MD 266-3909.

For Sale

FOR SALE– Practice for sale in Central Honolulu. PED/FP Great location. Great potential. Reasonable price. Call 225-9188 or e-mail Medoffice4sale@aol.com

Aloha Laboratories, Inc.
...When results count

CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

David M. Amberger, M.D.
Laboratory Directory

Phone: (808) 842-6600
Fax: (808) 848-0663
E-Mail: results@alohalabs.com
http://www.alohalabs.com

WE COLLECT PAST DUE ACCOUNTS

Only 25%* fee for Health Care Firms!

Why give up more!

Wood & Tait

HI Collection & Detective Agency
Staff on Kauai, Oahu, Maui, & Hawaii
http://www.woodtait.com

739-0433

jwood@woodtait.com

*Applies to accounts assigned during this promotion; no restrictions as to dollar size or age of accounts. Fee will increase to 50% if litigation or forwarding required; you will receive a contract.

Office of Cancer Communications
National Cancer Institute

Pap Tests
A healthy habit for life!

Pap tests can help find cervical cancer at an early stage – while it's still easier to cure.

Call the National Cancer Institute's Cancer Information Service at 1-800-4-CANCER (1-800-422-6237).

Visit NCI's website at http://www.nci.nih.gov

The Weathervane Russell T. Stodd MD

Never Go to A Costume Party As A Pinata.
While doing his pre-operative evaluation, the anesthesiologist noted that the patient had a cardiac arrhythmia. The eye surgeon assured him that the patient's cardiac problem had been evaluated by his physician, and to proceed with surgery for cataract. However, the anesthesiologist learned from the primary physician that he knew of no such arrhythmia. He instructed the anesthesiologist to cancel the surgery and send the patient directly to his office. This precipitated a loud argument between the surgeon and the anesthesiologist which was heard by surrounding staff and patients. Subsequently, the ophthalmologist contacted his brother who happened to be the chief of the anesthesiology group, and the offending anesthesiologist was discharged from the group on the premise that the group was too large for the available work load. He brought a law suit against the group claiming wrongful-termination, and that he was being penalized "for advocating for medically appropriate health care." Trial is pending.

Don't Sit Still. The Grim Reaper Is In The Seat Behind You.
At Heathrow in London, blood clots born of immobility, have caused more than 30 deaths in the last three years, and "economy class syndrome" has been introduced to the medical lexicon. It has long been known that lower extremity stasis can lead to big vein thrombosis, and consequent pulmonary and cardiac emboli. Autopsy studies dating back to the 1950s, revealed traveler deaths from prolonged sitting on buses, trains or aircraft, when deep vein thrombi migrated to vital organs. The crowded flights, narrow seats and jammed passageways, discourage travelers motion on modern aircraft. Yet, there are only minimal suggestions from flight attendants with recommendations to move about the cabin, or stretching during long flights. Obviously, passengers obstruct aisles, delay cocktail or dinner service and the like, so "better if they stay seated." Good rules of travel: eat light, drink light, keep moving, pack half the clothes and twice the money.

There Are Three Kinds Of Traffic Problems - Urban, Suburban And Bourbon.
Operating a motor vehicle while under the influence of alcohol has drawn much attention, but seldom do you read about bicycling and booze. A recent JAMA article of a study done in Maryland, summarized the problem in both adolescents and adults. For those cyclists arriving for treatment in emergency rooms, elevated blood alcohol content (BAC) was found in 8%, while of those who required hospital admission 16%, and the fatalities an alarming 32%. Although a precise factor is not possible, it appears that bicycling with a BAC of 0.08 g/dL or higher may subject the cyclist to a 20-fold increased risk of fatal or serious injury. The two primary avenues for injury result from an alteration in risk-taking behavior, such as excessive speed, riding at night, or in adverse weather, or failing to wear a safety helmet. And the other pathway is the deleterious function of the cognitive and psychomotor skills — impaired judgement, poorer balance, loss of muscle control, slower reaction to hazards, etc. Keep your pedal dry.

If Your Patient Is Suicidal, Get Your Fee In Advance.
Even though Jack (Dr. Death) Kevorkian, is out of circulation, the issue of doctor assisted suicide (DAS) remains a lively colloquy. About 400 people reportedly die each year in Holland as a result of DAS. Euthanasia however, is still technically a criminal offense, although the Dutch have tolerated it for years. Now the lower house of Parliament recently voted to legalize euthanasia, and the upper house is expected to endorse it also. Under the current statute, doctors are supposed to report the circumstances of each assisted death to a pathologist, who in turn sends a report to the public prosecutor. Physicians are not prosecuted if they abide by criteria for ensuring due care. But in fact, it is estimated that fewer than half of the doctors who participate in DAS even bother to report their actions. Under the new proposal, cases will go to a public prosecutor only if a review panel thinks the doctor didn't follow guidelines. Slippery slope, anyone? One can foresee that the extended care facilities in Holland may go broke.

Some Are Born Good, Some Make Good, And Some Are Caught With The Goods.
The state Attorney General's office announced the largest medical fraud recovery in Hawaii history. Interstate Pharmacy Corporation paid out $4 million to settle the complaint of illegally repackaging and re-dispensing drugs, and of fraudulent Medicare and Medicaid claims. Exact duration of the fraud is not known, but the investigation carried back at least six years. Legislation passed last year allows individuals to sue on behalf of the state when they know of false claims involving state moneys. This attractive whistle-blower law allows the complainant to capture between 15 and 25% of the money recovered. The two singing employees in this case get to split nearly 20%, or $750,000. No doubt, this case will encourage more employees to come forward when they know of fraudulent situations involving government programs.

It Could Be Opportunity Knocking, But More Likely It's A Bill Collector.
Never mind that Medicare/Medicaid and Hawaii Medical Services Assn. are squeezing the doctors from one side while overhead is squeezing from the other, now HHS' inspector general's office is leaning on young doctors to pay up and send checks to Health Education Assistance Loan program. In the last six months, 117 agreements have been reached. A New York dentist settled for $303,000; a Florida osteopath will pay $186,000, etc. You really cannot afford to fool around with these people. Many providers were referred for nonpayment, and 303 people were excluded from Medicare, Medicaid and other federal healthcare programs. While they probably won't place a horse's head in your bed, they can cut off your .....certificate to bill.

After Things Have Gone From Bad To Worse, The Cycle Will Repeat Itself.
On January 18, 2001, the Clinton administration Health and Human Services changed the rule regarding anesthesia for Medicare and Medicaid beneficiaries. Essentially, the alteration allows nurse anesthetists (CRNAs) to provide anesthesia without supervision, and bill directly for services. The American Medical Association and many medical societies have asked the new Secretary, Tommy Thompson, to rescind the order. "We believe Medicare and Medicaid beneficiaries deserve better than a mere presumption of safety that has no basis in the scientific literature." President George W. Bush suspended the rule change for 60 days.

It Has Yet To Be Proven That Intelligence Has Any Survival Value.
You have to wonder about the selection of Richard Cheney for Vice-President. Yes, he has had wide experience in both legislative and administrative government, and he enjoys the respect of leaders of both parties, and he is only 59 years old, and he is very intelligent. But, the man has endured cardiac arrest three times, had quadruple bypass surgery in 1988, and had angioplasty as recently as last November following the election when he had another "mild" heart attack. Anyone with that history deserves a quiet, restful life, a chance to enjoy family, and a comfortable hammock at poolside. No doubt, the beltway press corps has a lottery going on how long he will last.

The Greatest Nuisance To Mankind Is Man.
That great tool, the plumber's helper, is stashed in a corner closet of almost every home. In San Francisco, a man found a new use for it when he saved his father's life by pumping on his chest when he had a heart attack. A group of doctors in Minnesota were inspired by his action, and created a $200 medical instrument, the ambu-cardiopump. However, a sharp-eyed bureaucrat at the Food and Drug Administration ordered testing halted, because unconscious patients cannot give *informed consent*. Great. Perhaps the FDA should conduct field tests on the original use of the plumber's friend and let medical research plunge onward.

ADDENDA
- ❖ Men get hiccups more often than women. No one knows why.
- ❖ On a typical day your name is transferred by computer at least five times.
- ❖ Don't sweat the petty things, and don't pet the sweaty things.
- ❖ Never trust anyone who refers to Charles Manson as "Chuck."

Aloha and keep the faith —rts■

Contents of this column do not necessarily reflect the opinion or position of the Hawaii Ophthalmological Society. Editorial comment is strictly that of the writer.



Checked your practice lately?

You strive to be the best practitioner you can. You stay current in your field. You spend countless hours checking on the health of your patients.

Who is checking on the health of your practice?

Is your business thriving? Should you understand the cash flow side of your business better than you do?

TeamPraxis manages the business side of medicine. We optimize your:

- ***CPT coding.***
- ***Patient billing and collection.***
- ***A/R management.***
- ***Cash flow.***
- ***Work flow management.***

Give us a call to get a free consultation.

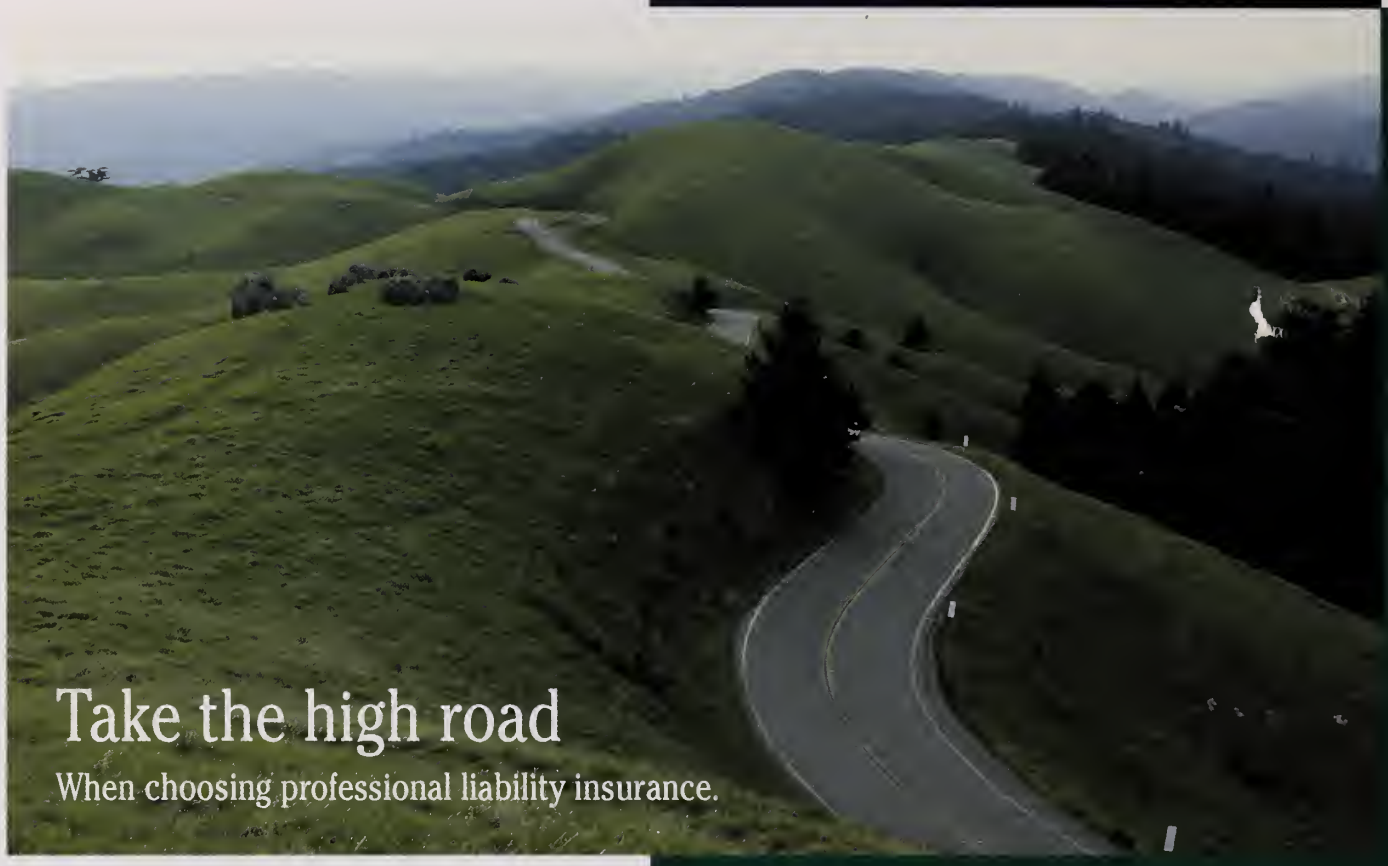
TeamPraxis™

Your practice management team.

948-9343

Neighbor Islands, call
866-TPRAXIS
(866-877-2947)

www.TeamPraxis.com



Take the high road

When choosing professional liability insurance.

NO RATE INCREASE IN 2001

MIEC

Medical Insurance Exchange of California

6250 Claremont Avenue
Oakland, California 94618
800-227-4527
www.miec.com

HAWAII CLAIMS OFFICE:
1360 South Beretania Street,
Honolulu, Hawaii 96814

Rated "A" (Excellent) by A.M. Best

Sponsored by the Hawaii Medical Association

THE SAFEST ROUTE IS
WITH AN EXPERIENCED GUIDE.

In Hawaii, that's MIEC. We are the West's first physician-owned, not-for-profit professional liability insurer. For more than a quarter century, we've protected doctors with financially secure coverage. We're also known for our unsurpassed, consistent track record of returning dividend credits to policyholders, ng results permit. We've urned over $200 million.

l liability insurance is a s relationship. At MIEC, commitment seriously.

Choose the genuine original, MIEC.

Hawaii medical journal
v. 60
no. 5
May 2001
Received on: 06-19-01
Brown University Library
SCI

HAWAII MEDICAL JOURNAL

1-SIZE
R15
H25x
SCI

June 2001 Volume 60, No. 6 ISSN: 0017-8594



MIXED ADC 967
Serials Dept
Sciences Library
Box I
Brown University
Providence, RI 02912-0001


NOW AVAILABLE
Protopic®
(tacrolimus) Ointment
0.03% 0.1%
Fujisawa Healthcare, Inc.
©2001 Fujisawa Healthcare, Inc. PT004 2/01





The only business credit card with local service. Imagine real people answering the phone when you call. Credit card processing that's done quickly. Prompt delivery when you need a new card. That's what you get with First Hawaiian Bank's MasterCard BusinessCard.™ It's also a powerful management tool since it keeps track of employee's travel and entertainment expenses and monitors vendor expenses. And payments can automatically be transferred from your business checking account. For more information, call us at 525-6262. A local call, of course.

First Hawaiian Bank

THE power OF yes.

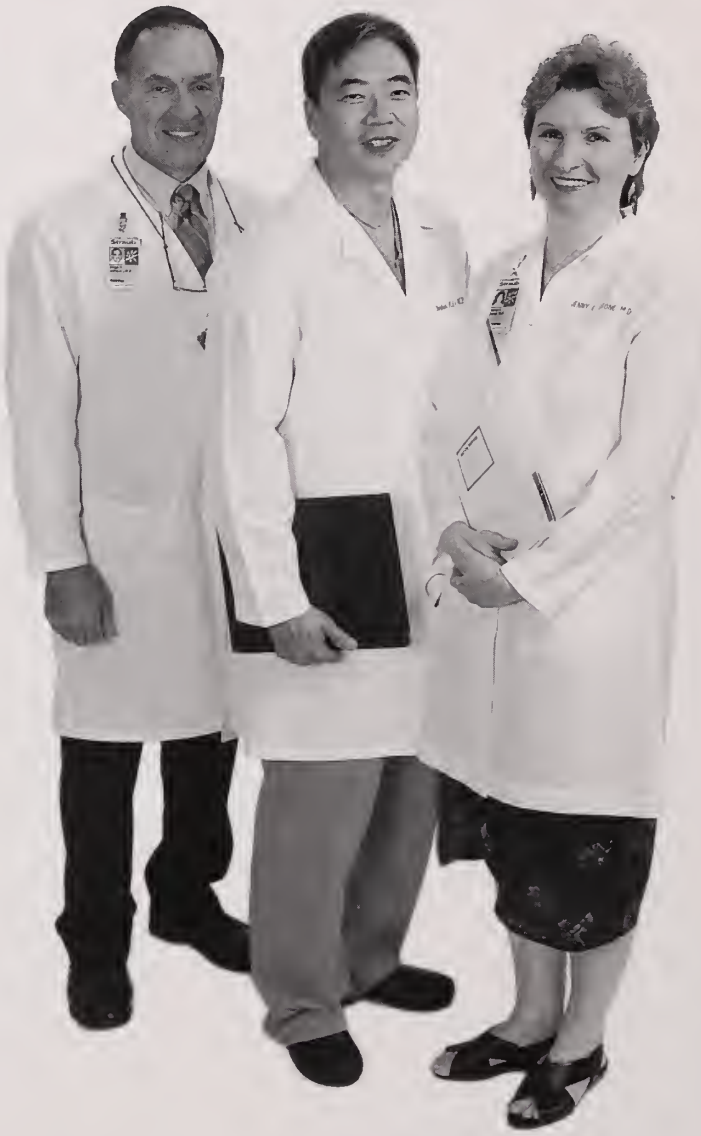
Member FDIC www.fhb.com

Our pledge to you

As Straub physicians, we welcome your referrals... and pledge to:

- Report our evaluation to you promptly by phone, fax or mail (whatever you prefer).
- Never make secondary referrals without your approval.
- Always direct the patient back to you for continuing care.

To make your referrals easy, we have a Physician Referral Specialist, Kym Kaohi. To contact Kym and to get a binder on Straub specialists and services, call 522-4444.





Straub
Partners in health
straubhealth.com

For assistance, call Kym at 522-4444

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
John Breinich MLS, Satoru Izutsu PhD,
James Lumeng MD, Douglas G. Massey MD,
Myron E. Shirasu MD, Frank L. Tabrah MD,
Alfred D. Morris MD

Journal Staff
Editorial Assistant: Drake Chinen

Officers
President: Philip Hellreich MD
President-Elect: Gerald McKenna MD
Secretary: Calvin Wong MD
Treasurer: Paul DeMare MD
Past President: James Lumeng MD

County Presidents
Hawaii: David Camacho MD
Honolulu: William McKenzie MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Gardner Quarton MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 2001 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 146

Commentary
Terrilea Burnett PhD 146

Hepatitis C, Diagnosis and Management: A Survey of Practicing Physicians in Hawaii
Thomas M. Cashman MD, MS, MSPH; Joe L. Elm, Jr. MS; Min Wu MD, MPH; Tammy Tom MA, MS; and Paul V. Effler MD, MPH 148

Chronic Hepatitis C Caused by a Virus – Fiction or for Real?
Naoky C.S. Tsai MD 155

Case of the Month
Niten Singh MD and Jeffrey P. Kavolius MD 156

Residents' Case Series
James H.E. Ireland MD, Cheryl Ganal-Ihori MD and Denny Nakayama MD 158

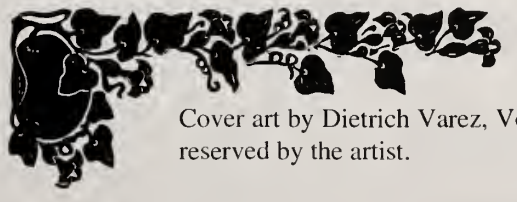
Medical School Hotline
Kay A. Bauman MD, MPH and Gordon Greene PhD 160

Cancer Research Center Hotline
Brian F. Issell MD 161

News and Notes
Henry N. Yokoyama MD 162

Classified Notices 165

Weathervane
Russell T. Stodd MD 166



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

Pele and Lehua

The bright red lehua flowers of the ohia tree are said to be sacred to Pele, goddess of Hawaii's volcanoes.

Editorial

Norman Goldstein MD
Editor, Hawaii Medical Journal

Hepatitis C, diagnosis and Management

Thomas M. Cashman, M.D., M.S., M.S.P.H., and his associates at the Hepatitis Control Section of the States Department of Health's Epidemiology Branch are to be congratulated for their extensive survey of 650 physicians who were diagnosed with hepatitis C since 1997.

Eighty percent of the physicians who were contacted by a series of questionnaires and phone calls were internists, family/general practitioners of gastroenterologists/hepatolgists.

The authors identified only 3,600 cases in a population that might have actually contained up to 21,000 hepatitis cases at the time the study was completed. Hepatitis c is underreported and this manuscript clearly points out the need to develop and publish guidelines for hepatitis C screening. We must all be alerted about the problems of hepatitis C, especially the primary care physician.

Our special columns

Regular readers of the Journal are quite familiar with the two columns that have graced our pages for many years. "News and Notes" by Henry Yokoyama, M.D., and the "Weathervane" by Russell Stodd, M.D., both continue to be at the top of the list when readers are asked "what do you read first when you get your journal?"

There is just so much happening medically in Hawaii, it is very difficult to know what is occurring right next door. The Journal hopes to help inform you about the many medical activities here in our island state. Mahalo to all our contributors.

Until there's a cure, there's the American Diabetes Association.

Commentary

Dignity in Medicine

Terrilea Burnett PhD

Trained as a scientist and clinician, I work at a major cancer research center in Honolulu, Hawaii. Currently, I investigate the molecular mechanisms, and the dietary and environmental factors which contribute to the development of cancer. Although most of my time is spent microscopically perusing dishes of living cells, or inputting data into a computer, my primary professional interest is cancers of the skin. It is easy to become interested in this area of oncology, because skin cancer is the most prevalent cancer in the western world, and due to a semi-tropical environment, Hawaii abounds in these cancers. In the small medical facility where I formerly practiced, I would see many of these cancers on a daily basis. However, along with the goodies comes real life, which means seeing scabies, zits and other undesirables. It was through the eyes of my patients, with their cacophony of ailments, that I was able to glean one of the most important aspects of patient care: dignity.

In my early days of patient care, I would cavalierly knock and immediately open the door to the exam room. Never did I entertain the thought that the patient may not have finished "gowning up", or may be mentally preparing for the exam. After all, **I** was the clinician; more patients awaited my expertise! An editorial in a highly regarded medical journal bounced me off my pedestal. After that, my door knocking would be followed by a polite, humble request for permission of the patient to enter his or her room, which of course it is during the transient period of the examination. No more addressing patients by first name. Just imagine being an 83 year old woman and being called "Irma" by a clinician who could be your grandkid! Wonder how the clinician would feel if "Irma" addressed him as "Joey"?

Two patients taught me invaluable and lifelong lessons about the need to respect the dignity of each and every patient. One patient was an elderly and immobile women who had been wheeled from the long-term care facility to the clinic exam room. Obviously in a vegetative state, this "horizontally-compromised" women overflowed from her wheelchair. No easy task to do a generalized skin exam on her! Well, concentrate on the face, where a basal cell carcinoma had been excised the previous year. These pesky little tumors have the bad habit of recurring, and hence need careful follow-up. Fastidious examination of every crease and wrinkle on the side of her face failed to reveal the scar from the excision. As my frustration mounted, an absolutely booming voice comes out of nowhere: **It's on the right side!!!** I retracted in horror. The vegetative body had a human being living inside. How could I have been so oblivious. Never have I felt shame of such magnitude.

The second patient was scheduled for a colleague. Shortly after entering the exam room, my colleague makes a quick exit, runs for me, and states: "she's crazy, she's absolutely crazy. I can't deal with her". A quick review of the patient's chart reveals that indeed, she is crazy. She is on a cocktail of virtually every anti-psychotic I have

Continued on p. 159

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA

Hepatitis C, Diagnosis and Management: A Survey of Practicing Physicians in Hawaii

Thomas M. Cashman MD, MS, MSPH*; Joe L. Elm, Jr. MS*; Min Wu MD, MPH**; Tammy Tom MA, MS*; and Paul V. Effler MD, MPH*

Abstract

We surveyed 652 Hawaii physicians who diagnosed hepatitis C (HCV) since 1997. Less than 20% of licensed physicians have diagnosed HCV and initial estimates suggest there are 12,000 to 18,000 undiagnosed HCV cases in Hawaii. Treatment is concentrated among twelve physicians and aggressive case finding may overwhelm present resources. More primary care physicians need to participate in the detection and management of HCV.

Introduction

Hepatitis C virus (HCV) is the most common cause of liver failure and liver transplants in the United States. Nationally, HCV causes about 70% of chronic liver disease, an illness responsible for 10,000 fatalities annually.[1] The US prevalence is estimated to be between 1.4% and 1.8% and two thirds of cases are asymptomatic. This incidence applied to Hawaii would mean that between 16,000 and 21,000 persons are HCV positive. At the completion of this study in March of 2000, we have identified 3,600 HCV cases with possibly another 12,000 to 18,000 persons not aware they are infected. Often HCV infected persons are unaware of the risk factors or the need to be tested.

Due to the insidious nature of HCV infection, initial diagnosis depends on a high index of suspicion. Knowledge of this disease has expanded rapidly over the last few years, and diagnostic procedures and recommendations for treatment are changing. Treatment is prolonged, has significant adverse effects, has less than a 50% success rate and decisions to initiate or continue antiviral therapy can be a challenge to medical judgment. The potential frequency of this disease in Hawaii's population could overwhelm the services provided by local Gastroenterolosists and Hepatologists (GI). Much of the burden of care may fall on family practitioners (FP) and internists (IM) and it is important they remain current in the ramifications of HCV.

Everhart et. al.[2] reported on a national questionnaire to Hepatologists and Gastroenterolosists on the management of HCV. Using their survey, forwarded to us by Dr. Hoofnagle, we developed our own questionnaire (appendix 1) and assessed physician management of HCV from those who had made that diagnosis since the beginning of mandatory reporting. Physicians were questioned on advice to patients and the management of two hypothetical cases.

Correspondence to:
Thomas M. Cashman MD, MS, MSPH
Epidemiology Branch
Department of Health
1250 Punchbowl Street, 4th floor
Honolulu, HI 96813
Telephone: 808-586-8324
Facsimile: 808-586-8304
E-mail: tmcashma@mail.health.state.hi.us

Materials and Methods

Since October 1997, all laboratories in Hawaii have reported all positive tests for HCV to the Hepatitis Control Section, Epidemiology Branch, Hawaii Department of Health. We identified all physicians who have diagnosed at least one case of HCV infection. We mailed our questionnaire to 652 physicians. The mail-out included, as an incentive to respond, the NIH National Consensus Statement, Management of Hepatitis C.[3] Physicians were asked to answer the questions as they applied to their own practice and not refer to the NIH statement until after they answered the questionnaire. To maintain anonymity we destroyed identifiers to the questionnaires. We made a second contact by telephone to non-responders, faxed a second survey and asked them to fax us their completed response. Of the remaining who still did not respond, we sent a second mail out with a Coppertone gift certificate of ten dollars. This last effort generated about 35 more surveys. Initial response to the first mail-out was about 25% while total responders to all three contacts numbered 314 (48%). We analyzed the data by comparison of proportions in EPI INFO 6.04b, 1999, and results were considered significant at alpha = 0. 05. Discrepancies in total numbers reported on specific survey questions were due to some responders returning incomplete surveys. The Department of Health (DOH) Institutional Review Board approved the study design.

Results

Of the 314 responders almost 80% reported their specialty as internal medicine, family/general practitioner or gastroenterology/hepatology. When compared to our registry of 3,362 practicing physicians in Hawaii, our study group was weighted toward the above specialties. During the study year, 86% of respondents reported they saw fewer than 10 HCV patients and 14% saw more than 10 patients. Of GI, 75% reported seeing more than 10 patients. Over 75% of respondents referred their patients once they made the diagnosis. Most GI (96%) did not refer their patients and 10 of the 12 physicians who treat more than ten patients per year were GI. IM and FP showed a similar distribution to non-GI in all survey responses.

More GI than the other Hawaii physicians (non-GI) reported

increased restrictions in case management from their patient's managed care or insurance company (67% vs. 38%, P = .005). The same was true when grouping physicians by experience. Sixty-three percent of the 44 physicians, 18 GI and 26 non-GI, who saw more than 10 patients in the past year reported increased restrictions while 38% of 231 physicians who saw 1 to 10 patients in the past year reported increased difficulties (P = .0005).

Comparing the general management of patients (Table 1), the questionnaire prompted physicians to answer "almost always", "sometimes" or "almost never" to the specific management questions. Significant differences were that the GI group did not recommend condoms in monogamous sex as often as non-GI (21% vs. 59%, P < .001) and recommended hepatitis A and B immunizations more frequently (83% vs. 57%, P = .01) and (88% vs. 66%, P = .02). There were no other significant differences in the suggested management questions.

In Case 1 (A 36 year old woman with positive antibody for HCV, no risk factors and normal liver enzymes, Table 2), most physicians would confirm the diagnosis with antibody tests (RIBA), or qualitative antigen identification (PCR). There was an inverse relationship between GI and non-GI with the use of RIBA or qualitative PCR. More GI would use the qualitative PCR (P = 0.01) while more non-GI preferred the RIBA (P = 0.001). Importantly most of the study group seemed to understand that in this case the positive EIA should be confirmed. For all other responses there were no significant differences.

If HCV infection were confirmed 65% of GI and 57% of non-GI would do or consider a liver biopsy. Fifty-eight percent of GI and 71% of non-GI would do or consider quantitative PCR and about one-third of both groups would do or consider an HCV genotype. These tests are normally done only if treatment is considered, yet no GI marked "yes" to treatment of this patient with interferon. However, 50% would consider it. Forty-six percent of non-GI would do or consider treatment and many physicians marked plus Ribavirin. About 70% of both groups would do or consider ultrasound of the abdomen, a test for extensive fibrosis or hepatic cell carcinoma (HCC) and about 60% of both groups would consider liver biopsy. Over 90% of both groups would follow this patient with serial liver enzyme studies and 25% of GI and 20% of non-GI would reassure and counsel only. There is an overlap on these latter two responses which may reflect a limitation of the survey and an inconsistent understanding of "counsel."

Table 1: Patient Lifestyle Recommendations: Compare Hawaii Gastroenterolosists to all other reporting Physicians (Almost Always responses).

Physician Group	GI* %	Non-GI %	P value
Not share toothbrush or razor	92	75	ns
Not share drinking glass	8	23	ns
Not hug or kiss a child	0	5	ns
Not donate blood or organs	91	85	ns
Minimize drinking alcohol	92	90	ns
Abstain from alcohol	96	79	ns
Condoms monogamous sex	21	59	<.001
Check sex partner	75	86	ns
Vaccinate hepatitis a	83	57	0.01
Vaccinate hepatitis b	88	66	0.03
Use herbal/alt. remedies	8	9	ns

• Physicians who identify themselves as Hepatologists or Gastroenterolosists

Table 2: Management of Case 1 (A 36 yo woman with a positive HCV antibody screen, normal liver enzymes and no risk factors): Compare GI to all other Hawaii Physicians (All = all responders less GI)

Response	Yes %		Maybe %		No %		P* value
Physician Group	GI	All	GI	All	GI	All	
Anti HCV	23	58	9	15	68	27	.001
Genotype	9	16	26	18	65	66	ns
Qualitative PCR	57	28	17	19	26	58	.004
Quantitative PCR	38	49	21	22	42	29	ns
If HCV is confirmed							
Liver biopsy	17	27	48	31	35	42	ns
Ultrasound of abdomen	54	52	17	17	29	31	ns
ALT every 6-12 mo.	92	91	0	5	8	4	ns
Counseling only	25	20	21	22	54	59	ns
Antiviral Rx	0	16	50	40	50	44	ns

* Calculated as comparison of proportions for yes answers

Table 3: Management of Case II 9A 54 yo man with positive antibody, a history of blood transfusions, intermittent fatigue and elevated liver enzymes): Compare GI to all other Hawaii physicians (all = all responders less GI)

Response	Yes %		Maybe %		No %		P* value
Physician Group	GI	All	GI	All	GI	All	
Anti HCV	8	52	0	11	92	37	<.0001
Genotype	54	41	33	22	13	37	.02
Qualitative PCR	21	30	0	17	79	53	01
Quantitative PCR	79	76	13	10	8	14	ns
If HCV is confirmed							
Liver biopsy	50	76	33	18	17	8	.007
Ultrasound of abdomen	92	82	4	9	4	10	ns
ALT every 6-12 mo.	48	87	13	5	39	8	<.0001
Counseling only	0	9	26	11	74	80	ns
Antiviral Rx	92	82	8	10	0	9	ns

* Calculated as comparison of proportions for yes answers

In Case 2 (A 54 year old man with positive antibody, a history of blood transfusions, intermittent fatigue and elevated liver enzymes, Table 3), most GI would not confirm the diagnosis with a RIBA or qualitative PCR but would go directly to a quantitative PCR. Fifty-two-percent of non-GI would do a RIBA, 30% would do a qualitative PCR and almost 80% would do a quantitative PCR. In this case confirmation of the EIA is not necessary and it is best to go directly to evaluation for treatment. Almost 90% of GI and more than 60% of non-GI would do or consider a genotype and almost 90% of non-GI would do or consider a quantitative PCR. Most of both groups (>80%) would do or consider liver biopsy, however, GI are more reluctant to mark a definitive yes (76% vs. 50%, P = .007). Most of both groups would do ultrasound of the abdomen. A higher percentage of GI than non-GI would not follow with serial ALTs (39% vs. 8%, P < .0001). Most of both groups would not follow this patient with counseling only and would treat this patient with Interferon and Ribavirin.

Discussion

The respondents are heavily weighted toward family practice, internal medicine and gastroenterology and are not representative of all Hawaii physicians. Due to the anonymous nature of the study, we could not identify the specialties of the original 652 to whom we sent survey forms; the respondents are compared to the total population of licensed physicians in the state. Twenty-four of twenty-five Gastroenterolosists returned the survey but only 24% of IM and 30% of FP returned the survey. The respondents most likely represented those who are most knowledgeable about HCV. Since we have identified only 3600 cases in a population that may contain up to 21,000 at the time this study was completed, there are likely a number of physicians who are not looking for HCV infection. It is possible that we overestimated prevalence. Fischer et. al.[4] reported a prevalence of 0.8% screening for hepatitis C in a health maintenance organization and quoted other studies reporting a prevalence lower than the national average. However preliminary data from an ongoing HCV survey of Hawaii citizens suggests a local prevalence of 1.6%.

Of all the respondents, most refer their patients, and treatment is concentrated among fewer than half of the Gastroenterolosists. If there are truly 21,000 cases in our population this group cannot do all of the care. Seef[5] reports that only 15-20% of those with chronic HCV develop cirrhosis and/or hepatitic cell carcinoma. Recent studies from Germany [6] in iatrogenically infected women and from Baltimore[7] in injection drug users show low risk of progression to cirrhosis. However other studies[8] suggest that approximately one-third of patients will progress to cirrhosis by twenty years and another third will have cirrhosis by thirty years. HCV patients need long term follow up and although Gastroenterolosists may need to evaluate and stage their disease, due to patient volume, primary care physicians may have to do much of the work. Much of the follow-up and patient education can be done in conjunction with physician sponsored support groups. Many patients need support groups to overcome their guilt and/or anger, and to verify outside information sources, such as the Internet. Also some patients on treatment suffer serious psychological side effects and physician monitored support groups can more easily identify these effects in their early stages. Presently, there are several support groups in Hawaii.

Gastroenterolosists and other physicians who see more than ten HCV patients per year report more difficulty with restrictions from managed care organizations. Those who have the most expertise probably have more encounters with the managed care organizations and request more expensive procedures. Indications for appropriate follow up and treatment are not clearly defined in all cases and managed care organizations may have difficulty defining what is appropriate treatment and follow up. However managed care organizations should know who are truly knowledgeable in the field.

Eighty-three percent of GI "almost always" recommend Hepatitis A immunization and 79% "almost always" recommend Hepatitis B immunization, while 57% of non-GI "almost always" recommend Hepatitis A and 66% "almost always" recommend Hepatitis B. This difference is significant (Table 1). Patients with chronic hepatitis are more susceptible to severe disease if infected with other forms of hepatitis[3,9] and all HCV positive patients should be immunized against Hepatitis A and B.

Most Hawaii Physicians agree that materials that might harbor blood should not be shared with individuals with HCV. Open wounds should be covered and bloody articles from the HCV positive person should be disposed using universal precaution techniques. Patients and their families need some basic instructions in these techniques. Most respondents also agree that casual contacts such as common chinaware or touching another (kiss a child) do not pose any real risk.

Though most respondents (83%) would test the sexual partners of HCV patients, there is a significant difference between GI and non-GI recommending condoms in monogamous relationships (21% GI and 59% non-GI). Risk of sexual transmission of HCV is not well defined. STD clinic attendees have a higher prevalence than the general population but lower than IV drug users.[10] Cross sectional studies from Northern Europe and the US show a low incidence in partners of index cases. Southern Europe and Asia report higher incidences, however it seems that the risk of transmission in monogamous discordant couples is low.[10] The question becomes, is having multiple sexual partners a cause of transmission, a confounder or an unrelated association? The NIH Consensus states that there is insufficient data to recommend changes in the sexual practices of monogamous partners.

The NIH recommends that drinking alcohol is a contraindication to interferon therapy. A number of studies demonstrate the deleterious effect of drinking alcohol in patients with chronic HCV.[11,12,13,14] These effects include a more rapid progression to fibrosis and hepatic cell carcinoma. Bellentani et al[15] report that alcohol consumption of greater than 30 grams/day significantly aggravates the natural course of HCV and Loguercio et. al.[16] show the abstainers respond better to interferon treatment and have lower HCV RNA levels than those who drink less than 40 grams of alcohol per day. However the adverse effects of small doses of alcohol are not universally accepted and recommendations vary from allowing an occasional drink[17] to total abstinence.[11, 16,18] Of Hawaii physicians, 96% of GI and 79% of non-GI recommend total abstinence. Members of the St. Francis Hepatitis C patient support group strongly recommend total abstinence and presently this is the wisest course.

Although third generation enzyme linked immunosorbant assays (EIA-3) are more specific than their predecessors, false positives are present among low risk patients or blood donors.[18,19] A positive

RIBA demonstrates the presence of antibodies but does not confirm viremia. Usually a negative RIBA indicates a false positive EIA. In Case 1 (Table 2), 23% of the GI and 68% of non-GI would do RIBA ($P < .0001$) while 57% of GI and 28% of non-GI would do qualitative PCR ($P = .004$). The difference between the 2 groups is significant and reciprocal. In Case 1, the EIA needs to be confirmed by either a RIBA or qualitative PCR. The qualitative PCR is more expensive than the RIBA by several hundred dollars but does answer if the patient is viremic or not. RIBA merely confirms the presence of anti HCV antibodies.

The NIH Consensus does not consider genotyping as part of the routine management of patients. Genetic variants respond differently to therapy and genotyping predicts response rate and treatment duration.[19,20] Treatment of patients with genotype I requires a longer duration. The position of the NIH Consensus is that there is no rationale for treatment of patients with normal aminotransferase levels[3]; therefore there is no need for genotyping in the routine treatment of Case 1. Only a small percentage of our study group would order this test (9% GI and 16% non-GI).

There is little or no correlation between HCV-RNA titers and disease severity and progression. Current quantitative assays are not as sensitive as the qualitative PCR[3], however, low titers are correlated with a better response to treatment.[21] The NIH Consensus states that treatment of patients with persistently normal ALT levels is not beneficial and may actually induce liver enzyme abnormalities. We can infer from the NIH Consensus that the quantitative test is not indicated. Yet over a third of the GI and almost half of non-GI would order this test and, in light of more recent studies, some patients like Case 1 might benefit from treatment. Therefore Case 1 could require genotype and quantitative PCR testing.

The NIH Consensus does not give clear indications for liver biopsy in HCV patients. Histologic comparison of liver biopsies in patients with normal or elevated ALTs can show similar degrees of injury.[18] Patients with normal ALTs tend to have milder degrees of hepatic injury but 14% still progress to fibrosis.[22] Dienes et. al.[23] also report that significant fibrosis occurs in some HCV patients with persistently normal ALT levels and normal serial ALTs or even a negative PCR cannot absolutely predict the absence of fibrosis. Those who have HCV with normal ALTs tend to be female and those persons who contract the disease after 40 or 50 years of age tend to have a more rapid progression. It would seem that the only way to document progression or non-progression in all HCV patients is by serial liver biopsies. This procedure does have risks, however, if there is progression of disease, it may be best to treat these patients in spite of the NIH recommendations. Studies of treatment of these patients are currently underway.[24] Fifty percent of GI would consider the possibility of treatment and 56% of non-GI would do or consider treatment in this patient. Twenty-five percent of the GI and 20% of non-GI would counsel only, however it is better to continue with follow up of all HCV positive patients.

In Case 2 (Table 3) there is little need to do RIBA confirmation. In high-risk populations the sensitivity of the ELISA-3 is greater than 90%.[18] As this patient is likely to be a candidate for treatment, the qualitative PCR test will confirm active infection and a genotype will indicate the duration of treatment. Quantitative PCR also confirms viremia and indicates treatment prognosis but is not as sensitive as the qualitative test. Of GI, only 8% would do a RIBA and only 21% would do a qualitative PCR. Seventy-nine percent of GI would do a quantitative PCR and 54% would do a genotype. Fifty-two percent of non-GI would do a RIBA and the difference between non-GI and GI is highly significant ($P < .0001$). Thirty percent of non-GI would do a qualitative PCR and 76% of non-GI would also do a quantitative PCR. It seems that physicians prefer a quantitative PCR in this patient, probably as a cost saving measure.

Interestingly, only 50% of the GI would definitely do a liver biopsy while 76% of the non-GI would do so. However, another third of GI would consider liver biopsy. Liver biopsy is the only definitive method of determining the presence of fibrosis and the imperative for treatment. The more cautious approach of GI with liver biopsy may be a result of more personal experiences with complications.

Ninety-two percent of GI and 82% of the non-GI would do ultrasound of the abdomen. There is a difference in opinion about monitoring with serial ALTs between GI and non-GI (48% vs. 87%, $P < .0001$). HCV liver disease can progress even when the patient demonstrates repeated normal ALTs. Although less invasive, serial ALTs do not seem to be a completely satisfactory means to monitor these patients but the only alternative is serial liver biopsies. Most Hawaii physicians would not be content with counseling only, but would treat case 2 with Interferon and Ribavirin. This combination therapy is now the standard for treatment.

There is confusion among some Hawaii physicians about the management of these cases. Some of the discrepancies are due to the limits of the questionnaire but some are due to incomplete knowledge of HCV diagnosis and management. Another source of confusion is the new information that challenges the position of the NIH recommendations.[25] Busy physicians who see only a few HCV patients would feel the pressure to update themselves on present cases rather than the data on HCV unless they encountered a new HCV case. In Case 1 it would seem best to establish if this patient is viremic. If the test is positive, then consider liver biopsy and if there is liver damage, then consider treatment. The definitive factor is progressive liver disease rather than abnormal ALTs as the NIH recommendations suggest. If treatment is an option then quantitative PCR and genotyping are indicated. In Case 2 it would seem more efficient to go right to quantitative testing, genotype and liver biopsy.

We compared our non-GI results to the National Survey of Gastroenterologists[2] (NS GI) done three to four years prior to this study and before the development of the NIH recommendations (Tables 4 & 5). These responses reflect both the Hawaii Family Practice and Internal Medicine responses. Table 4 shows the Hawaii non-GI recommend Hepatitis A & B vaccination more frequently. They have a greater concern about the effects of alcohol and sexual transmission than does the NS GI surveyed 4 years previously. The Hawaii group also has a better grasp of the value of genotype and quantitative PCR testing, especially in Case 2.

The responders to this survey are not representative of Hawaii physicians but represent those who are most aware and most interested in HCV disease. It is likely that a number of physicians in primary care settings are not looking for the disease, and diagnosis and treatment of HCV are concentrated among a small group. Most treatment is concentrated among 10 Gastroenterologists and the potentially large number of cases in the community could over-

Table 4: Patient Lifestyle Recommendations: Compare Hawaii non-GI to National Survey[2] results (Almost Always responses).

Physician Group	non-GI %	NS* %
Not share toothbrush or razor	75	81
Not share drinking glass	23	14
Not hug or kiss a child	5	2
Minimize drinking alcohol	90	74
Abstain from alcohol	79	33
Use condoms in mono. Sex	39	30
Check sex partner	86	54
Vaccinate hepatitis A	570	18
Vaccinate hepatitis B	66	32

* National Survey Gastroenterolosists

Table 5: Management of Cases 1 & 2, Compare Hawaii non-GI to NS GI (Yes answers).

	Case 1		Case 2	
Physician Group	non-GI	NS GI	non-GI	NS GI
Frequency/%	%	%	%	%
Anti HCV	58	61	52	45
HCV genotype	16	5	41	13
Qualitative PCR	28	49	30	52
Quantitative PCR	49	17	76	33
Liver biopsy	27	45	76	91
Ultrasound	52	32	82	64
ALT6-12mo.	91	78	87	57

whelm present treatment resources. Much of the follow-up could be done through physician-sponsored support groups and primary care/family practice physicians are well suited for this.

HCV is under-reported and there is a clear need to develop and publish guidelines for HCV screening. Risk factors that should alert physicians include: blood or blood product transfusions before 1993, drug and alcohol abuse especially when it involves IV drugs, multiple sexual partners, tattoos done non-professionally, and homosexual male sex.

The NIH National Consensus Statement[3] and update[1] does not address all the issues and is in part outdated. There are differences of opinions in patient management among experts familiar with these patients. Diagnostic tests are improved and have helped to more easily identify patients and predict treatment outcome. Indications for treatment are changing and there is frank disagreement with the position of the NIH Consensus Statement on the treatment of patients with normal ALTs. Managed care organizations that do aggressive case finding to identify high-risk patients for early intervention and promote support groups for these patients may reduce treatment costs in the long run. Patient support and education in groups can be more effective and cheaper than one-on-one patient education in the physician's office. Hawaii physicians seem to be quite cautious about liver biopsy in these patients when compared to NS GI. Present information suggests that all patients diagnosed should be considered for liver biopsy. Periodic educational updates to increase index of suspicion, especially for primary care physicians who see occasional HCV patients, are essential.

Authors

**Thomas M. Casluman MD, MS, MSPH*
**Joe L. Elm, Jr. MS*
**Tammy Tom MA, MA*
**Paul V. Effler MD, MPH*
Epidemiology Branch, Hepatitis Control Section, State Health Department, Honolulu, Hawaii.

***Min Wu MD, MPH*
University of Hawaii, School of Public Health

Appendix 1

State of Hawaii Department of Health Hepatitis C Physician Survey, see pp.153-154.

References

1. NIDDK. Chronic Hepatitis C: Current Disease Management. *NIH Publication No. 99-4230*, 1999; pp. 1-123.
2. Everhart JE, Stolar M, Hoofnagle JH. Management of Hepatitis C: A National Survey of Gastroenterologists and Hepatologists. *Hepatology*. 1997;26:78S-85S.
3. NIH Consensus Statement. Management of Hepatitis C. 15: No 3, 1997; March 24-26.
4. Fischer LR, Tope DH, Conboy KS, et al. Screening for Hepatitis C Virus in a Health Maintenance Organization. *Arch Intern Med*. 2000;160:1665-1673.
5. Seef, LB. History of Hepatitis C. NIH Consensus Development Conference. 1997; March 24-27.
6. Wiese M, Berr F, Lafrenz M, et al. Low Frequency of Cirrhosis in a Hepatitis C (genotype 1b) Single-source Outbreak in Germany: a 20-year Multicenter Study. 2000; *Hepatology*. 32:91-96.
7. Thomas DL, Astemborski J, Rai RM, et al. The Natural History of Hepatitis C Virus Infection Host, Viral and Environmental Factors. *JAMA*. 2000; 284:450-455.
8. Muir AJ. The Natural History of Hepatitis C Viral Infection. *Seminars in Gastrointestional Disease*. 2000; 11: 54-61.
9. Gish, RG. Standards of Treatment in Chronic Hepatitis C. *Seminars in Liver Disease*. 1999; 19 (sl): 35-48.
10. Rooney G, Gilson RJC. Sexual Transmission of Hepatitis C Virus Infection. *Sex Transm Inf*. 1998;74:399-404.
11. Regev A, Jeffers LJ. Hepatitis C and Alcohol. *Alcohol Clin Exp Res*. 1999;23: 1543-1551.
12. Makimoto K, Higuchi S. Alcohol Consumption as a Major Risk Factor for the Rise in Liver Cancer Mortality Rates in Japanese Men. *Int J Epidemiol*. 1999;28:30-34.
13. Wiley TE, McCarthy M, Breidi L, et al. Impact of Alcohol on the Histological and Clinical Progression of Hepatitis C Infection. *Hepatology*. 1998;28: 805-809.
14. Mori M, Hara M, Wada I, et al. Prospective Study of Hepatitis B and C Viral Infections, Cigarette Smoking, Alcohol Consumption, and Other Factors Associated with hepatocellular Carcinoma Risk in Japan. *Am J Epi*. 2000;151:131-39.
15. Bellentani S, Pozzato G, Saccoccio G, et al. Clinical Course and Risk Factors of Hepatitis C Virus Related Liver Disease in the General Population: Report from the Dionysos Study. *Gut*. 1999;44: 874-80.
16. Logeuercio C, Di Pierro M, Pia Di Marino M, et al. Drinking Habits of Subjects with Hepatitis C Virus-Related Chronic liver Disease: Prevalence and effect on Clinical, Virological and Pathological Aspects. *Alcohol & Alcoholism*. 2000;35:296-301.
17. Degos F. Hepatitis C and Alcohol. *J Hepatol*. 1999;31 (Suppl. 1):113-8.
18. Lawrence SP. Advances in the Treatment of Hepatitis C. *Advances in Internal Medicine*. 2000; 45: 65-105.
19. Schiff ER, DeMedina M, Kahn RS. New Perspectives in the Diagnosis of Hepatitis C. *Seminars in Liver Disease*. 1999; 19 (sl): 3-15.
20. Tsambiras PE, Jeffrey P, Nadler P. Hepatitis C: Hope on the Horizon. Infectious Diseases Society of America: 37th Annual Meeting, Nov. 20,1999. Available at: http://www.medscape.com.
21. Zetterman RK. Chronic Hepatitis C Infection and Other Liver Diseases. 1999 American College of Gastroenterology Annual Scientific Meeting, Available at http://www.medscape.com.
22. Tassopoulos N. Treatment of Patients with Chronic Hepatitis C and Normal ALT Levels. *Journal of Hepatology*. 1999; 31 (Suppl. 1):193-196.
23. Dienes HP, Drebber U, von Both I. Liver Biopsy in Hepatitis C. *Journal of Hepatology*. 1999;31 (Suppl.) 43-6.
24. Gholson CF, Morgan K, Catinis G, et al. Chronic Hepatitis C with Normal Aminotranserase Levels.: A Clinical Histological Study. *Am. J. Gastroenterol*. 1997;92:1788-92.
25. Davis, G. Current Therapy for Chronic Hepatitis. *Gastroenterology*. 2000; 118: s104-s114.

State of Hawaii Department of Health
Hepatitis C Physician Survey

Please blacken your responses using a lead pencil or a black ballpoint pen. Thank You.

1. **What is your medical specialty? (check all that apply)**

Emergency Medicine ◯	Family Practice ◯	Gastroenterology ◯	Hem/Onc ◯
Hepatology ◯	Infectious Disease ◯	Internal Medicine ◯	Nephrology/Urology ◯
OB/GYN ◯	Pediatrics ◯	Other _____ ◯	

2. In the past 12 months, how many patients have you diagnosed or treated for Hepatitis C?	None ◯	1-5 ◯	6-10 ◯	>10 ◯
3. Do you generally refer patients with suspected or confirmed hepatitis C to other physicians for further evaluation and treatment?	Yes ◯	No ◯		
4. In the past 12 months, how many patients with hepatitis C have you treated with interferon?	None ◯	1-5 ◯	6-10 ◯	>10 ◯
5. Today, are you more or less likely to treat hepatitis C with interferon than you were 12 months ago?	More ◯	Less ◯	No Difference ◯	
6. For any of your hepatitis C patients, are there restrictions placed on the care you provide by the patient's health care plan or managed care company? For example, must you obtain prior approval for diagnostic tests or before prescribing anti-hepatitis C pharmaceuticals?	Yes ◯	No ◯	Not Sure ◯	

Please indicate the frequency with which you recommend the following to your patients:

I counsel my Hepatitis C patients to:	**Almost Always**	**Sometimes**	**Almost Never**
7. Not share toothbrushes or razors	◯	◯	◯
8. Not share drinking glasses	◯	◯	◯
9. Not hug or kiss children	◯	◯	◯
10. Not donate blood or organs	◯	◯	◯
11. Minimize alcohol consumption	◯	◯	◯
12. Abstain from alcohol consumption	◯	◯	◯
13. Use condoms in a monogamous sexual relationship	◯	◯	◯
14. Have sexual partners checked for HCV	◯	◯	◯
15. Be vaccinated against hepatitis A	◯	◯	◯
16. Be vaccinated against hepatitis B	◯	◯	◯
17. Use alternative/supplemental treatments such as herbal remedies	◯	◯	◯

Case History #1

After attempting to donate blood for the first time, a 36 year old woman was told she is positive for antibody to hepatitis C virus (HCV) and referred to you. She has no symptoms and has no history of hepatitis or jaundice. Examination is normal. Blood tests show normal activities of serum aminotransferases (ALT and AST, also known as SGPT and SGOT) and normal bilirubin and albumin concentrations.

For this patient, would you order the following tests?

	Yes	**No**	**Maybe**
18. Antibody to HCV by recombinant immunoblot assay (Matrix, RIBA)	◯	◯	◯
19. HCV Genotyping	◯	◯	◯
20. Qualitative PCR for HCV RNA	◯	◯	◯
21. Quantitative PCR for HCV RNA	◯	◯	◯

(Continued on back)

Case History #1 - continued

If HCV infection is confirmed in this patient, would you recommend the following?

	Yes	No	Maybe
22. Liver biopsy	○	○	○
23. Ultrasound of the abdomen	○	○	○
24. Monitoring by aminotransferase every 6-12 months	○	○	○
25. Counseling only	○	○	○
26. Treatment with interferon	○	○	○

If yes,				
	what kind of interferon?	Consensus ○	Alpha ○	Other ○
	what dosing schedule?	3 - 6 million units 3x weekly ○	3 - 6 million units daily ○	
	follow-up how often?	2x a year ○	3-4x a year ○	>5x a year ○

Case History #2

A 54 year old man has a history of trauma requiring blood transfusions 15 years ago. He has intermittent symptoms of fatigue. Other than the liver being mildly tender, physical examination is normal. Blood tests show raised serum aminotransferase activities (ALT=267, AST=132); normal bilirubin and albumin concentrations, and normal prothrombin time. He is positive for anti-HCV.

For this patient, would you order the following tests?

	Yes	No	Maybe
27. Antibody to HCV by recombinant immunoblot assay (Matrix, RIBA)	○	○	○
28. HCV Genotyping	○	○	○
29. Qualitative PCR for HCV RNA	○	○	○
30. Quantitative PCR for HCV RNA	○	○	○

If HCV infection is confirmed in this patient, would you recommend the following?

	Yes	No	Maybe
31. Liver biopsy	○	○	○
32. Ultrasound of the abdomen	○	○	○
33. Monitoring by aminotransferase every 6-12 months	○	○	○
34. Counseling only	○	○	○
35. Treatment with interferon	○	○	○

If yes,				
	what kind of interferon?	Consensus ○	Alpha ○	Other ○
	what dosing schedule?	3 - 6 million units 3x weekly ○	3 - 6 million units daily ○	Other ○
	follow-up how often?	2x a year ○	3-4x a year ○	>5x a year ○

	Yes	No	Maybe
36. Treatment with interferon + ribavirin	○	○	○

If yes,				
	what treatment protocol?	Standard/Schering ○	Research ○	Other ○
	follow-up how often?	2x a year ○	3-4x a year ○	>5x a year ○

Thank you for your participation.
Please return this anonymous survey in the envelope provided to:
State of Hawaii Department of Health,
Epidemiology Branch,
1250 Punchbowl Street, Rm 444,
Honolulu, HI 96813

Chronic Hepatitis C Caused by a Virus – Fiction or for Real?

Naoky C.S. Tsai MD

The editor of the Hawaii Medical Journal received a printout of an article appearing in a news column on ABCNEWS.com (July 24, 1999) which criticized the scientific community for advocating the theory that the current epidemic of chronic hepatitis C is caused by a virus based on flawed scientific fundamentals. The article was sent to him by two of his patients who obviously were concerned about this and its ramifications.

The issues raised by the author, Mr. Nicholas Regush, are the following:

1. The virus C has never been isolated in an intact form.

2. The virus has never been grown successfully in a cell culture.

3. No animal model of hepatitis C caused by injecting this virus has been established.

4. No one has documented that this virus is infectious.

In other words, the Koch's principles were not met, and therefore to claim that the current candidate HCV-RNA genome reconstructed through molecular engineering techniques is scientifically unsound, and to advocate it to be "the virus which caused the chronic hepatitis is flawed.

The "virus" that caused the post-transfusion non-A non-B hepatitis has been suspected to be in existence since early 1970's. Through many researchers' works, it is known that this agent or agents that caused this disease are filterable and likely to be RNA virus. The scientists from NIH blood bank and CDC virology section had been collecting plasmas from several chimpanzees that had been repeatedly infected by patient's serum and are believed to be infected by these agents. These plasma were all labeled and kept by Dr. Harvey Alter. For many years since 1975, there were many laboratories around the world that were sent samples of an agent that they believed to be the virus that causes the hepatitis. But all failed the tests set up by Dr. Harvey Alter. In 1987 the Chiron Corp. scientists finally identified an antigen that is a fragment of a genetically engineered protein product that they had identified through tedious isolation processes from infected chimpanzees' plasma. This antigen was able to capture a specific antibody circulating in patients with chronic hepatitis due to transfusion. The antigen was then used to develop a serology test. Dr. Alter then tested the serums kept. The results were published in Science magazine in 1987. Since then many different laboratories in the world were able to reproduce their findings and the entire genome of this RNA virus was mapped. It is a fact that so far there is no cell culture system in existence to propagate the virus, but it has been visualized in the endoplasmic reticulum of infected liver cells under electron microscopy. Two articles were recently published having proved that the full-length complementary DNA clone of HCV can transmit hepatitis in the animal model—chimpanzees. In addition, there was much clinical evidence which strongly suggested that this is a real agent which caused about 80-90% of the so-called post-transfusion non-A non-B in the U.S. For instance, both in the U.S. and Japan, the incidence and prevalence of post-transfusion hepatitis C have plunged since the implementation of screening tests for all donated blood. This is especially true in Japan where HIV infection is much less than in the U.S. Furthermore, clinical experience in my own practice and for many of my colleagues who are also engaged in the treatment of chronic hepatitis C, eradication of the HCV-RNA material from serum has not only normalized liver enzymes but also improved or normalized their hepatic histo-pathology. For those unfortunate patients who relapsed after eradication of the virus, their liver enzymes and liver histology also showed recurrence. This is convincing evidence implying that HCV-RNA is indeed the cause of the hepatitis.

I was able to contact and speak with Dr. Richard Strohman, a molecular biologist at UC Berkeley quoted in the news column. He was very kind in agreeing to discuss with me the issues of this concern. I believe Dr. Strohman has a point in pure scientific merit that the current scientific evidence especially without a cultural system and proper animal model is weak and needs more study to prove beyond any doubt that the HCV-RNA is the cause of hepatitis C. But he agreed with me that this scientific impurity should not stop us, the clinicians, to use this HCV-RNA as a surrogate marker to threat our patients who are at risk of developing end stage liver disease and hepatic-cellular cancer. The patients who suffered from chronic hepatitis C should also be aware that the article is arguing for the proper scientific evidence and not that the disease is not in existence. Though personally, I do believe we have the right virus, and recent studies have shown encouraging evidence that the culture system for the virus may become available before too long.

My qualm with the ABC columnist is that he used sensational language and rhetoric in his article which is, I believe was intended for general audiences who are not savvy in molecular sciences creating a false impression that all the farce in current chronic hepatitis C disease is nothing but a "shibai" played by the scientific and medical community in conjunction with the pharmaceutical industry for profit. I think this is not what he intended as can be seen in the first paragraph of this article. Scientific news reporting and

Continued on p. 165

Case of the Month

Surgical extirpation of a chest wall desmoid tumor: A Case Report

Niten Singh, MD and Jeffrey P. Kavolius MD
Department of Surgery
Tripler Army Medical Center
Honolulu, Hawaii

Abstract

A case is described of an anterior chest wall desmoid tumor in a 20-year-old Micronesian male that had been previously incompletely resected one year prior to presentation. A radical chest wall resection was performed with reconstruction accomplished using a gortex patch and latissimus dorsi myocutaneous flap. The patient developed a massive local recurrence within eight months following surgery. This report illustrates the local aggressiveness of these benign tumors. A historical perspective, etiology, and treatment principles are discussed.

Case Report

A 20-year-old Kosraen male was referred for treatment of a recurrent left anterior chest wall desmoid. Approximately one year prior to referral the patient underwent an excisional biopsy. The mass quickly returned and, in fact, doubled in size over the preceding four months prior to referral. The patient did not describe any functional disability related to the mass, and was otherwise healthy except for a seizure disorder.

Physical examination revealed a 12cm x 18cm mass of the left anterior chest wall, extending from above the clavicle superiorly to the axilla laterally (Figure 1). The neurovascular examination of the left upper extremity was normal. Chest x-ray and CT scan showed the mass arising from the chest wall with a prominent intrathoracic component. The mass was intimately associated with the brachial plexus and subclavian artery and vein (Figure 2).

The patient underwent a radical chest wall resection to include the clavicle, the first and second ribs, a portion of the manubrium, and the pectoralis major and minor muscles. Complete tumor clearance was obtained. There was obviously little if any margin along the brachial plexus, artery, and vein. Reconstruction was accomplished using a gortex patch and a latissimus dorsi myocutaneous rotation flap (Figure 3). The patient's post-operative course was unremarkable. External beam radiotherapy was recommended to aid in local control, however, the patient declined opting instead to return home to Kosrae. Eight months later, he was noted to have a massive recurrence involving the entire shoulder girdle, which extended intrathoracically (Figure 4). Since the patient declined further surgery it was recommended that he be placed on tamoxifen.

Discussion

The term desmoid arises from the Greek word *desmos* meaning bandlike.[1] The first description of desmoid tumors in the literature was from Mcafarlane in 1832 who described two cases of abdominal wall desmoid tumors. In 1849 Bennet described the microscopic characteristics of 3 growths occuring on the thigh, parotid region, and in the arm, respectively. These tumors all recurred after local excision. Paget in 1856 also reported on two cases of desmoid tumors in the abdominal wall and forearm, and under the microscope noted that these tumors were of the same origin. He suggested trauma as an etiologic factor.[2]

Figure 1



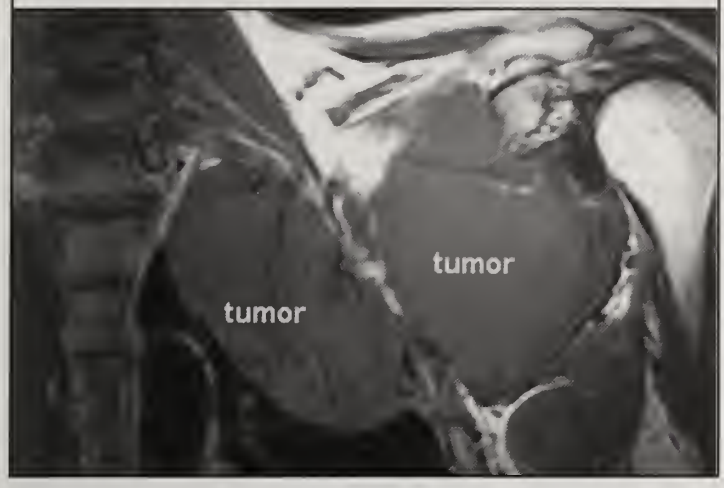
Figure 2



Figure 3



Figure 4



Desmoid tumors are histologically benign neoplasms that are poorly encapsulated and are characterized by a locally infiltrative growth pattern. It is this behavior that is responsible for high rates of local recurrence despite wide resection. The natural history of these tumors is that of slow, locally invasive growth that may stop or even regress. [3] Desmoid tumors have the potential for malignant transformation and, in fact, may be difficult to distinguish from low-grade fibrosarcomas. Desmoids may occur sporadically or may be seen in association with familial polyposis coli syndrome (FAP), suggesting a hereditary predisposition. Sporadic forms occur primarily within the abdominal wall and extraabdominal sites whereas desmoids associated with FAP occur primarily within the bowel mesentery. [4] Pregnancy, estrogenic hormones, and trauma have all been implicated in the etiology of these unusual and unpredictable tumors. [5] The overall incidence of desmoids is approximately 2-4 cases per million population per year with a predilection for females. They represent 0.03% to 0.1% of solid tumors and occur in the following distribution: 58% extraabdominal; 36% within the abdominal wall; and 15% intraabdominally. [1] Chest wall desmoids account for approximately 20% of all desmoid tumors.

Surgery is the mainstay of therapy for these neoplasms. The goal of surgical therapy is to achieve a negative pathologic margin. What remains controversial, however, is how radical surgery should be to achieve this goal. A positive or close margin following resection would intuitively predict for local recurrence. This, however, has not been consistently shown in the collected series. [6,7,8] It is generally accepted, therefore, that aggressive attempts at achieving negative pathologic margins that result in severe disfigurement, limb loss, or neurologic impairment is not justified. As noted by Lewis *et al.* (6), function and structure preserving procedures should be goals of therapy. The use of radiation therapy in the setting of close or positive margins may improve local control, although this is subject to debate as well. [9-12] Because desmoids appear to be hormonally mediated tumors as evidenced by their common presentation during pregnancy as well as reports documenting regression after menopause and after oophorectomy, hormonal agents such as tamoxifen have been used for treatment. [7,13]. Nonsteroidal anti-inflammatory agents have also been used. Treatment with these agents is typically in the setting of close margins following resection or for recurrent disease. Response rates are on the order of 50% with these agents. [14] Overall survival and disease-free survival at 20 years for desmoid tumors are approximately 90% and 65-70%, respectively. [4,5]



References

1. Pereyo, NG and Heimer, WL. Extra-abdominal desmoid tumor. *Journal of American Academy of Dermatology.* 34: 352-356.1996.
2. Hayry, P. and Scheinin, TM. The Desmoid (Reitamo) Syndrome: Etiology, manifestation, pathogenesis, and treatment. *Current Problems in Surgery.* 24: 1988. 233-320.
3. Mendez-Fernandez, MA and Gard, DA. The desmoid tumor: "benign"neoplasm, not a benign disease. *Plast.Reconstr.Surg.* 87:956-960.1990.
4. Lynch, HT, Fitzgibbons, R. Surgery, Desmoid Tumor and Familial Adenomatous Polyposis: Case Report and Literature Review. *American Journal of Gastroenterology.* 91:2598-2601.1996
5. Moley, JF and Eberlein, TJ. Soft tissue Sarcomas. *Surgical Clinics of North America.* 80: pp. 2000.
6. Lewis, JJ, Boland, PJ, Leung, DHY, Woodruff, JM and Brennan, MF. The Enigma of Desmoid of Tumors. *Annals Surgery* 229: 866-873.1999.
7. Easter, DW and Helasz, NA. Recent trends in the management of desmoid tumors. Summary of 19 cases and review of the literature. *Annals of Surgery.* 210: 765-769.1989.
8. Mirabell, R., Suit, HD., Mankin,HJ, *et al.* Fibromatoses: from postsurgical surveillance to combined surgery and radiation therapy. *Int J Radiat Oncol Biol Phys* 1990; 18: 535-540.
9. Ballo, MT, Zagars, GN, Pollack, A et al. Desmoid Tumors; prognostic factors and outcome after surgery, radiation therapy or combined surgery and radiation therapy. *J.Clin.Oncl.*17: 158-166. 1999.
10. Brooks, JS. Concepts in the pathology of soft tissues: A primer for General Surgeons. In *Problems in General Surgery: Soft tissue tumors.* William G. Kraybill ed. 16:13-23.1999.
11. Reitamo, JJ. The desmoid tumor: choice of treatment, results and complications. *Archives of Surgery.* 118:1318-1322. 1983.
12. Kiel, KD and Suit, HD. Radiation therapy in treatment of aggressive fibromatoses (Desmoid tumor). *Cancer.* 54:2051-2055.1984.
13. Reitamo, JJ, Schein, TM, Hayry, P. The desmoid syndrome. New aspects in the cause, pathogenesis, and treatment of the desmoid tumor. *American Journal of Surgery.* 152: 230-237. 1986.
14. Waddell, WR, Kirsch, WM. Testolactone, sulindac, warfarin, and vitamin K1 for unresectable desmoid tumors. *American Journal of Surgery.* 161: 416-421. 1991.

Residents' Case Series

A 54-Year-Old Man With Arthritis and Diarrhea

James H.E. Ireland MD*, Cheryl Ganal-Ihori MD*, and Denny Nakayama MD**

A 54-year-old Japanese man was transported to the emergency department by ambulance unable to walk and complaining of pain and swelling in his left ankle, left knee and right sternoclavicular joint. The patient had an episode of low back pain two months prior to admission and was seen by a chiropractor. During his treatments for low back pain, he noted slight left knee pain and swelling. Ten days before admission, the patient had up to five loose stools per day and at times watery diarrhea without melena or hematochezia. In the three days before his emergency room visit, low-grade fevers developed accompanied by a marked increase in the pain and swelling of the left knee which left him unable to ambulate. At this time, he also noticed new pain and swelling of the left ankle and right sternum. He had a recent ten-pound weight loss with minimal nausea, but denied emesis, skin lesions, rash, oral ulcers, penile discharge, chest pain, shortness of breath, or abdominal pain.

The patient had a past medical history of adult onset diabetes mellitus and hypertension. He had not suffered from joint pains or effusions in the past. He did report a similar episode of diarrhea four months previously, but this resolved spontaneously without treatment. His medications included glyburide, metformin, indapamide, and recently celecoxib. He worked as a postal employee in an office and had a 50-pack-year smoking history, but had quit two years ago. He drank up to twelve beers every weekend. He had no recent pet or freshwater exposures, denied illegal drug use, had no recent foreign travel or extramarital sexual encounters.

Physical examination revealed a man in mild to moderate distress secondary to pain with a temperature of 99.2 degrees, a blood pressure of 130/80, a heart rate of 86 beats per minute, and a respiratory rate of 18 breaths per minute. The left knee had a significant effusion, mild warmth and erythema with tenderness at the medial aspect of the knee at the tibial plateau. The left ankle was warm with moderate effusion and tenderness, but no erythema. The right sternoclavicular joint had warmth, welling, erythema and tenderness. The exam of the other joints and spine was unremarkable. Examination of his neurological, cardiovascular and respiratory systems was normal. His abdomen was soft, nontender and without organomegaly. Bowel sounds were present and the rectal exam was normal with guaiac negative stool.

Laboratory evaluation revealed hemoglobin of 13.2 g/dL, a leukocyte count of 19.7×10^9/L with 78% neutrophils, 13% bands, 4% lymphocytes, 4% monocytes, and 1% atypical lymphocytes. His abnormal chemistries (and normal values) were as follows: sodium 132 mEq/L (135-145), chloride 91 mEq/L (98-106), bicarbonate 31 mEq/L (22-29), glucose 308 mg/dL (70-115), albumen 1.5 g/dL (3.5-5.5), total protein 5.6 g/dL (6.0-8.0), alkaline phosphatase 233 U/L (38-126), iron 11 µg/dL (65-175), total iron binding capacity 79 µg/dL (250-450), iron saturation 14% (20-50), ferritin 526 ng/ml (20-250), prealbumin 6 mg/dL (>18) and erythrocyte sedimentation rate 48 mm/hr (<15). Lipase, amylase and uric acid levels were normal. Synovial fluid from his left knee showed: RBCs 11133/mm^3, WBCs 86250/mm^3 with 88% neutrophils, 2% lymphocytes and 10% monocytes without crystals or organisms seen by staining or culture. Evaluation of stool revealed no occult blood, WBCs or Clostridium difficile toxin and was negative for ova and parasites and pathogenic bacteria.

A bone scan after the administration of 25mCi of Tc-99m diphosphonate compound showed increased uptake in the left knee and ankle as well as the left sacroiliac joint. An In-111 labeled white cell study revealed intense left knee and ankle uptake and right proximal foot uptake. This scan also showed markedly increased and diffuse large bowel activity consistent with colitis.

A colonoscopy was then performed and showed cobblestoning, linear ulcerations and involvement of nearly the entire colon with some normal regions distally. Biopsy specimens of colonic mucosal fragments revealed areas of necrosis with acute and chronic inflammatory cells in the lamina propria. One section showed lymphoid aggregates, but crypt abscesses and granulomatous lesions were not seen. The patient was diagnosed with Crohn's disease.

The patient was treated with steroids, azathioprine and mesalamine with resolution of his diarrhea and joint pain. His steroids were tapered and stopped as an outpatient. He was maintained on mesalamine and azathioprine and has generally been doing well. In the year since discharge, he has had three flares of his joint pain which were accompanied by diarrhea. This responded to a short course of steroids and increased doses of his other medications.

Discussion

This patient presented with joint pain and diarrhea suggesting an enteropathic arthropathy as the etiology of both complaints. Arthritis occurs in approximately 2% of patients with enteric infections such as Yersinia, Campylobacter, Shigella, Salmonella or Clostridium difficile.[1] These infections can be detected by stool culture and a toxin assay for C. difficile. Whipple's disease and Celiac disease can also be associated with arthritis, but these are primarily disorders of small bowel. Finally, inflammatory bowel disease such as ulcerative colitis and Crohn's disease can have an associated arthritis in up to 20% of patients.

Drs. Crohn, Ginzburg and Oppenheimer described patients with regional ileitis in the Journal of the American Medical Association in 1932. Crohn's disease has a prevalence of approximately 75/100,000 with a higher frequency in Caucasians and people of Jewish ancestry.[2] In Hawaii, it is found in all ethnic groups with varying frequencies. The cause has not been fully elucidated. There is an abnormal activation of the immune system involving the gastrointestinal tract in patients who are genetically susceptible.

Family studies have supported a genetic component. Affected patients report a positive family history 10-20% of the time. Other studies have found at least one additional affected family member in about one third of cases. Concordance in monozygotic twins is approximately 40%. Two studies of dizygotic twins reported a concordance of 4% and 0%, respectively. Affected children are diagnosed 10-17 years before the age their affected parent was diagnosed. This may be due to ascertainment bias (heightened screening) or anticipation (earlier age of onset of genetic disorders

in successive generations.)[3]

Molecular studies have found a number of loci with significant linkage to Crohn's disease. This includes IBD1 on chromosome 16 and IBD2 on chromosome 12. Other genes under investigation include the mucin genes MUC2 and MUC3, and various HLA class 2 genes.[3]

Crohn's disease often presents with diarrhea, abdominal pain and weight loss; however the presentation is variable and may be mild. This can lead to long period of time before a definitive diagnosis is made. Nonspecific laboratory findings may include a leukocytosis, thrombocytosis, hypoalbuminemia and an elevated ESR. Other findings may include deficiencies in folate, iron and vitamin B12.[4] Antibody tests with varying sensitivities and specificities include antineutrophil cytoplasmic antibodies (pANCA), anti-Saccharomyces cerevisae antibody (ASCA IgA and IgG), ompC, PAB and I2.[5]

The location of the gastrointestinal lesions is also variable and anywhere from the mouth to the anus can be affected. Isolated aphthous ulcers may be the only manifestation of disease. There are three common patterns seen at the time of presentation: ileum and cecum in 40%; small intestine in 30%; and colon in 25%.[4]

Arthritis is the most common extraintestinal manifestation of Crohn's disease. Peripheral arthritis is most common in patients with disease confined to the colon. One study found arthritis in 16% of patients with Crohn's colitis, while only 4% of patients with ileitis or ileocolitis had arthritis.[4]

The onset of arthritis is variable. It usually occurs after intestinal symptoms or simultaneously. Rarely, arthritis may clearly precede bowel symptoms. Exacerbations of arthritis and intestinal symptoms tend to recur together.[6]

The affected joints typically have pain, erythema and swelling. The knees and the ankles are most commonly affected followed by the wrist, shoulder and elbow. Less commonly affected joints include the hips, proximal interphalangeal joints, metacarpophalangeal joints and metatarsophalangeal joints. Our patient had involvement of the sternoclavicular joint which is likely rare as it was not cited in two of the papers reviewed that included nearly 1000 patients with IBD.[7,8]

The usual pattern is asymmetric and pauciarticular with a migratory pattern in more than half of patients.[2] The arthritis is usually transient with most attacks lasting less than a few weeks. A minority of patients (5-20%) have joint symptoms longer than one year. Usually, deformity or permanent joint damage does not occur.

Axial involvement may occur and can present as spondylitis with sacroiliitis in 1-6% or as isolated sacroiliitis. Asymptomatic sacroiliitis may be found radiographically in 4-40% of patients and in 52% when bone scanning is used (as with our patient.)[6]

In patient's with Crohn's disease and arthropathy, treatment should be directed at the bowel disease. As the intestinal symptoms subside, the arthritis will often subside as well. Aminosalicylates are first-line therapy in mild to moderate Crohn's disease. More severe disease may require immunomodulators such as azathioprine or 6-mercaptopurine, corticosteroids or infliximab (anti-TNF-α).[9]

James H.E. Ireland MD and Cheryl Gaual-Iliori MD
Residents in Internal Medicine, University of Hawaii John A. Burns School of Medicine, Integrated Internal Medicine Residency Program

** Denny Nakayama MD*
Assistant Clinical Professor of Medicine, Consultant in Rheumatology, University of Hawaii John A. Burns School of Medicine, Department of Internal Medicine.

References

1. Eerola, E., Peltonen, R. The Gastrointestinal System. Oxford Textbook of Rheumatology. Maddison, P.J. et al. (Eds.) Oxford. Oxford Medical Publications. 1998: 255-6.
2. Mielants, H., Veys, E.M., Enteropathic Arthropathies. Rheumatology. Klippel J.H., Dieppe, P.A. (Eds.) London. Mosby. 1998: 24.1-24.6
3. Church, J.M. Molecular Genetics and Crohn's Disease. Surgical Clinics of North America 2001, 81(1): 31-38.
4. Stenson, W.F. Inflammatory Bowel Disease. Textbook of Gastroenterology. Philadelphia. Lippincott, Williams and Wilkins. 1999: 1775-1788.
5. Dubinski, M.C. Utility of Antibody Markers in the Diagnosis, Differentiation and Stratification in Inflammatory Bowel Disease (IBD). University of Hawaii Internal Medicine Grand Rounds, 4/24/01.
6. Gravallese, E.M., Kantrowitz. Arthritic Manifestations of Inflammatory Bowel Disease. The American Journal of Gastroenterology 1988, 83(7): 703-708.
7. Greenstein, A.J., Janowotz, H.D., Sachar, D.B. The Extra-Intestinal Complications of Crohn's Disease and Ulcerative Colitis: A Study of 700 Patients. Medicine 1976, 55(4): 401-7.
8. Palumbo, P.J., et al. Musculoskeletal Manifestations of Inflammatory Bowel Disease. Ulcerative and Granulomatous Colitis and Ulcerative Proctitis. Mayo Clinic Procedings 1973, 48: 411-6.
9. Van den Bosch, F. et al. Crohn's disease associated with spondyloarthropathy: effect of TNF-a blockade with infliximab on articular symptoms. Lancet 2000, 356 (9244): 1821-1822.

Continued from p. 146

ever heard of. Well, these things make life interesting! After seating myself in front of the patient, the patient confides that she has bugs in her head. The bugs have been driving her crazy (no surprise about that one). Can I help her? I stand, and carefully part her hair. *Oh, my God.* Her head is a sea of "ukus", the Hawaiian word for the insect form of head lice. It is like the snake pit in a famous archeology film. Every time I move a strand of hair, dozens of horrible, lightening-fast insects run in an equal number of directions. I have never seen anything like this in clinical practice. Ever!

I owe a lifetime of eternal gratitude to these two patients, and indeed, to all my patients. They have taught me that crazy people can have "ukus", and that vegetative people have feelings. By listening to our patients, and extending kindness, warmth and compassion, we bring ourselves to a level which invites trust and openness on the part of the patient. By treating each and every patient with the respect and dignity that every human being is entitled to, we invite healing. The best part: healing occurs in both the patient and the clinician.

Editor's Comment

This commentary is a part of a collection of essays on "Healing in Clinical Practice," which was intergrated into a course "Medicine and Soul" at the Williams College in Williamstown, MA, designed for aspiring medical professionals.

Dr. Burnett is now a Research Coordinator at the Cancer Research Center of Hawaii. When I first met her, she was a medical assistant to David Elpern MD, dermatologist at the Wilcox Clinic on Kauai. With the encouragement of David Elpern, she went on to get her PhD and is a frequent speaker at the Hotspots in Dermatology seminars held annually on our neighbor islands. Proud of you, Terrilea and thank you David Elpern for encouraging her to continue her education.

Medical School Hotline

The Role of Teaching the Doctor-Patient Relationship in Medical Education

Kay A. Bauman, MD, MPH, Associate Dean, Office of Student Affairs
and
Gordon Greene, PhD, Office of Medical Education
John A. Burns School of Medicine (JABSOM)

When the JABSOM Family Practice (FP) Department began its required third-year clerkship in 1994, it included a series of discussions on the doctor-patient relationship. For family physicians, but perhaps for all of medicine, the doctor-patient relationship represents the crux of medical care. Patient satisfaction is often related to the quality of the perceived relationship. Law suits can result when a patient deems that bond of trust has been breached or even inadequately established. Patient-care outcomes have been shown to be affected significantly by the patient's perception of the physician's focus on his or her needs.[1] Yet, we are often so caught up in teaching the management of asthma, hypertension, diabetes, headache, a breast mass, a positive stool guaiac, a seeming endless list of topics, that not enough time is spent on the doctor-patient relationship and ways to impact positively on that communication.

In Hawaii, where students themselves may represent as many cultures and ethnicities as there are persons in the small group discussion, cultural approaches to illness and health are particularly important with the doctor-patient dynamics. The FP clerkship provides a rich environment where these discussions can take place. Culturally sensitive considerations are important in patient care situations such as for depression or schizophrenia, where embarrassment or blame may need to be dealt with. Cultural sensitivity is important in caring for a person with diabetes to enable him or her to find power to self-manage medicines, diet, and exercise; in caring for a six-year old recently diagnosed with ADD (Attention Deficit Disorder); or for a sexually active 14-year old. Communication skills will make a difference in simple but important considerations such as immunization acceptance rates, mammography adherence, colon cancer screening, or with other preventive practices. But how can these concerns be taught that many of us learned only through experience?

JABSOM's doctor-patient "course" spans 4 sessions, each lasting 1 1/2 – 2 hours. There are a series of required readings for each session, taken from known American writers or from physicians writing from their own experiences. The topics covered in each seminar are:

Session 1: Hope
Session 2: Coping
Session 3: Communcation/Miscommunication
Session 4: Physician Mistakes/Physician Humanity

To introduce the discussion of "Hope," students are asked to read the chapter "Hope and the Cancer Patient" from the book How We Die by Dr. Sherwin Nuland.[2] This challenging essay written by a general surgeon contrasts his humane management of one of his patients with advanced colon cancer to his interference in the management of his own brother's advanced cancer. He fell into the "physician's trap" (as we call it) of equating hope with cure in his brother's situation, but defined it more broadly in delivering care to his own patient, allowing the patient to define his hope for the remainder of his life. Other short essays discussed in this seminar are several from JAMA's "A Piece of My Mind" that can challenge the student to look at hope from different patient perspectives.

Students read Hemingway's story, "Indian Camp,"[3] and, "A Summer Tragedy,"[4], written by Afro-American novelist Arna Bontempts. These 2 stories of suicide challenge the student to look at persons' abilities to cope, and how a physician may or may not impact on that ability. Perhaps more importantly for this second session, each student writes an essay of how his or her family dealt with a medical situation—sometimes successfully, sometimes ineffectively. Then each student reflects on how this doctor-patient-family relationship might impact on skills they wish to acquire as student physicians. The faculty have learned more about how different cultures in Hawaii approach illness through the students' sharing of family stories, than in any of our other experiences in Hawaii, even perhaps those with patients!

For the third session, students read from Patient-Centered Medicine by Stewart et al[5] on how physicians and patients may or may not find "common ground" in approaching management of a medical problem. Students present orally (and turn in as written) a case scenario from their medical school experience demonstrating the principles of finding common ground. Again shared by the students are wonderful examples of this art of physician-patient communication or miscommunication. Upon reflection, students can often see how a preceptor may have imposed an action plan for disease management on a patient that has little chance for success, as the physician may not have been listening carefully to the patient's understanding of and/or approach to his problem.

Physician mistakes are the topic for the last session and preparatory readings include the essay "Mistakes" by David Hilfiker[6] from the collection of stories, poems, and essays, On Doctoring and one physician's story of her physician husband's suicide from Archives of Family Practice.[7] Students reflect on the awfulness of Hilfiker's mistakeningly doing a D & C on a patient for what he diagnosed as a "missed abortion" from multiple negative pregnancy tests and found he was aborting a live fetus. The impact of this mistake caused Hilfiker to leave the practice of medicine for some time. Students discuss mistakes they have seen in their training and how they were dealt with (or not dealt with!). With much difficulty, they attempt to design a healthier way for physicians to deal with their own errors or those of colleagues—errors that they always plan to, even expect to, avoid, but that, over time, may be inevitable.

There are always more articles that could promote effective student discussion on the doctor-patient relationship, but finding more time in the curriculum for these discussions is difficult. Nonetheless, the Department of Family Practice has remained committed to including this type of teaching in its required clerkship

Continues on p. 165

Cancer Research Center Hotline

Availability of Clinical Trials for Hawaii Cancer Patients

Brian F. Issell MD

There are many hundreds of cancer centers throughout the country but only about 50 of those involved in patient care have achieved National Cancer Institute designation based on research excellence. The Cancer Research Center of Hawaii is one of them. Furthermore, the Center is unique in that it does not operate its own treatment facility. In order to minimize this deficiency on new treatment opportunities for Hawaii cancer patients, the Center has worked hard over many years to provide clinical trials through Hawaii's private community hospitals, private practitioners, and the Tripler Army Medical Center.

The importance of having patients and their physicians participate in clinical trials cannot be over emphasized. All advances that have been made in cancer care have been identified through participation of patients in clinical trials. Clinical trials provide the scientific evidence for treatment recommendations and guidelines.

A goal should be to enroll the majority of patients in clinical trials. Since clinical trials results are the basis for treatment guidelines, patients on clinical trials should be representative of those encountered in everyday clinical practice. When only a minority of cancer patients participate in clinical trials, there is reduced confidence that treatment guidelines are appropriate for patients commonly encountered. This is especially pertinent to Hawaii's multiethnic population whose treatment response may be quite different to mainly Caucasian patients attending tertiary referral centers on the mainland, the source of most evidence for current treatment recommendations.

The access of Hawaii's cancer patients to national, peer-reviewed clinical trials is an essential component of quality cancer care in our state. Clinical trials provide potentially better treatments while guaranteeing the best evidence-based care in a closely monitored setting. Today, 40-50% of cancer patients cannot be cured by current treatments. The National Institute of Health in a report to the Senate Appropriation Committee stated: "For patients with life-threatening disease for which standard therapy is inadequate or lacking altogether, participation in well-designed, closely monitored clinical trials represents best medical care for the patient. The National Cancer Institute believes that clinical trials are standard therapy for cancer patients to whom a curative therapy cannot be offered.

Helping healthcare providers maintain proficiency is a further benefit of clinical trials participation. Physicians and other providers who treat patients on clinical trials benefit from the continuing education they derive in the process. Clinical trials protocols and their introduction and promotion give providers information on up-to-date care and indicate the direction of future scientific advances.

Presently, the Center has more than 100 clinical trials from National Cancer Institute-supported clinical research groups including many of the most promising new treatments available at the country's major cancer centers. This achievement has been made possible through receiving since 1994, a highly competitive Minority-Based, Community Clinical Oncology Program grant from the National Cancer Institute. Only eight of these grants are awarded throughout the U.S. Now, most Hawaii cancer patients do not have to endure the additional burden of travel to the mainland for optimal care. Also, we provide clinical trials that test ways to prevent the most common cancers, such as of the breast and prostate, for individuals who are at most risk for these diseases. Along with clinical trials, we conduct seminars and lectures for the continuing education of physicians and other health professionals in all aspects of cancer care and prevention. We are especially proud that through the tireless efforts of Center staff and community professionals, we have in recent years achieved the participation of almost all Hawaii clinical oncologists in our clinical trials and education activities.

National Cancer Institute- sponsored clinical trials are organized in several national/international cooperative groups. Hawaii participates in the following: Southwest Oncology Group (SWOG), Children's Oncology Group (previously named Pediatric Oncology Group), Gynecologic Oncology Group (GOG), National Surgical Adjuvant Breast and Bowel Project (NSABP) and Radiation Therapy Oncology Group (RTOG). Community oncologists provide leadership for specific cooperative groups: Jeffrey Berenberg, M.D. for SWOG, Robert Wilkinson, M.D. for Children's Oncology Group, Keith Terada, M.D. for GOG, Robert Oishi, M.D. for NSABP and Paul DeMare, M.D. for RTOG. Carolyn Gotay, Ph.D., deputy director of the Clinical Trials Unit, provides leadership for all psychosocial and behavioral studies.

Contact the Clinical Trials Unit at 586-2979 for any questions concerning clinical trials for your patients. Clinical research associates are available to help evaluate the suitability of your patient for an active clinical trial, to assist with counseling involved in putting a patient on study, and to facilitate study monitoring and data collection. Dorothy Coleman, R.N., M.S. is manager of the Clinical Trials Unit. Brian Issell M.D., FACP is director of the Unit.

A New Resource Kit from the National Cancer Institute

Cancer Research
BECAUSE LIVES DEPEND ON IT

Cancer Research challenges, advances, and opportunities

Cancer Statistics

Research Initiatives

Clinical Studies... and more

To order, call NCI's Cancer Information Service at

1-800-4-CANCER
(1-800-422-6237)

People with TTY equipment, dial 1-800-332-8615

News and Notes Henry N. Yokoyama MD

Potpourri...

A young couple got married after an old fashioned courtship that didn't include any serious sexual activity...

When they arrived at their hotel room, the groom began to get undressed...After he had taken off his shoes and socks, his bride looked at his feet and said, "What's wrong with your toes? They're all gnarled and twisted."

"Oh, that," he said... "When I was a boy, I had a case of TOLIO"...

"Don't you mean polio?" she asked.

"No, he answered... It's like polio, but it involves your toes."

The man continued to get undressed and took off his shirt and pants. His wife looked at his legs curiously. "What happened to your knees?...They are scarred and swollen."

"Oh, that, when I was a teenager, I had a case of kneasles."

"Don't you mean measles?"

"No," he said, "It's like measles, but involves your knees."

A few moments later the man stood completely naked before his wife...

The wife looked at him and said, "I see you must have had a case of SMALL COX too."

— — — — — — — —

A man went to see his doctor for a checkup... After some tests, the doctor came back with a serious look on her face. "I have some bad news and some really bad news.

"Well give me the really bad news first."

"You have cancer and only six months to live."

"And the bad news?"

"You have Alzheimer's Disease."

"Thank God," the patient said, "I was afraid I had cancer."

Dr. Howard Bennett

— — — — — — — —

Naming the Baby

There comes this short, but seemingly long time after delivering the baby when you wait for the placenta...I thought a little idle conversation might help...

"What are you going to name this little girl? I asked...

Before she could answer, I said, "Oh, here comes the placenta." Whereupon, she replied, "I like that name."

To the best of my knowledge, "Placenta" Johnson is still living in Houston, Tex...

Dr. Rudi Kirschnie
Phoenix, Arizona

— — — — — — — —

Mind your Language

Medicalese: The word "Tender" could easily land a male doctor in front the disciplinary board. God save him if he tells his female patient that her breasts are "tender" . To him the word evokes pain but to her, erotic pleasure...

Another example of a contentious word is "functional". The word evokes passion and hostility.

A worker complains of severe backache and says he is unable to work. After examination and tests, the doctor declares the pain "functional".

"If it is functional, how come I can't function?"

"I'm certain the pain is "supratentorial," the doctor replies...

"Since it's super pain, you should issue me a disability certificate."

Dr. Muri Abdurrahan

— — — — — — — —

A Quick Cure

Ida was one of my favorite patients. She was a French Canadian widow with a large family, all well known in the community. Unfortunately her diabetic atherosclerosis led to her having a CVA and she was admitted to a nursing home. Understanding her speech and her weakness was difficult for her entire family.

One day, during my morning office hours, I was informed that her condition had deteriorated. She wasn't eating or drinking, and her speech was unintelligible, her face was "twisted" and she was slumped to the left...

"Oh no!" I thought. "Another stroke with a poor prognosis."

I arrived at the nursing home and started to review her chart. I was already thinking of the many calls to her extended family that I would be fielding once I let her son know of her condition...

On examination, she was certainly changed. Her face was slack, she was drooling and unable to communicate, yet there was no further limb weakness and her eyes had their usual humorous glint. Her grip unchanged and I started to worry about some weird kind of cerebral infarct.

She seemed to have trouble swallowing. I wanted to test her cranial nerves and gag reflex.

Lo and behold, she returned to normal when I removed her dentures, revealing a complete set already in place...

Dr. Mark Wilkins

— — — — — — — —

Hi Tech Rectal

An old fellow came to my office very reluctantly for a physical. He said, "I haven't had a physical for over 40 years since I was in the Army, because I hate the prostate exam...

But my old army buddy who's a retired doctor told me it's all done with computers now, so I decided to give it a shot."

"All done with computers?" I asked flabbergasted. "How in the world is that possible?"

"My old buddy assured me that the exam is totally digital now."

Dr. Conrad Schulte

— — — — — — — —

What am I?

A quarter of a century ago, I was an intern completing my OB/GYN rotation. I was assisting the chief of the department in a busy university teaching hospital. Our last patient for the day was lying on the exam table with her legs in stirrups, awaiting the insertion of an IUD...

Dr. X (the chief) turned to me and ordered, "Dr. Fisher, would you please get me a nurse."

I respectfully inquired, "What is it you need, Dr. X, perhaps I can get it for you."

The chief lost his patience and snapped, "Dr. Fisher, get me a nurse now! I need a woman in the room."

Stunned, I blushed, "But Dr. X, you do have a woman in the room."

"Not the patient," he yelled. "We need a female other than the patient as a witness."

"But Dr. X "I pleaded, fearful of being insolent, "What am I?"

"A doctor," he instinctively retorted."

As I stood frozen, Dr. X continued to stare at me. Slowly his face turned crimson as he came to the apparently surprising realization that a doctor and a woman could coexist in the same body.

Dr. Deborah Fisher
Toronto

— — — — — — — —

Uninformed Consent

I recently saw an elderly man with chest pain of one-hour duration. His EKG showed an acute inferior MI. After listening to his lengthy and detailed history, I told him the diagnosis and the recommended treatment...

I explained to him the risks and benefits of thrombolysis...He seemed very enthusiastic and agreeable so I asked him to sign the consent form. The thrombolysis went well and the patient did well. Later we learned that he'd left his hearing aid at home. He'd simply given his history and just smiled and agreed with everything thereafter...That was the easiest consent that I had ever obtained.

Dr. Charles Peti, White City, SASK

I was with my husband at a baseball game in Boston's Fenway Park when I decided to get myself a hot dog. As I stood up, my husband wanted me to buy him a beer. The young clerk at the concession asked to see verification of my age. "You've got to be kidding, "I said. I'm about 40 years old." She apologized, but said she had to insist...

When I showed her my license, the clerk served me the beer... "That will be $4.25"

I gave her $5.00 and told her to keep the change. "The tip's for carding me," I said...

She put the change in her tip cup. "Thanks," she said, "Works every time."

Angie Dewhurst

Med Tid Bits...

Researchers at Eastern Virginia Medical School are testing a new contraceptive formula called SEASONALE which can reduce the number of periods to as few as four a year. Dr. Freedaloph Anderson, study leader says "Not every woman can do this initially. But with fine tuning, women can learn to turn their cycles off and on to suit their schedules." If FDA approves Seasonale, the first pill produced for this purpose could reach the pharmacies by 2003.

— — — — — — — —

Cholesterol Counts:
A new study show cholesterol counts drop 10% in kids and adults when switching from butter to soft tub margarine...

Hepatitis Hope:
Hepatitis C (which afflicts 3 million Americans) is the leading cause of liver cancer and cirrhosis... Today's Rx: Mostly interferon which is not always effective and has fever, chills, aches and pain.
Researchers have developed a modified interferon called PEGASYS which can be taken once a week instead of 3 times a week, has fewer side effects and is 2 to 5 times more effective...

ADHD:
ADHD is usually a/c with hyperactive little boys; but these days, millions of adults are also being treated for Attention Deficit/Hyperactive Disorder... 50 to 60% are adult women...
The leading theory is that women now seeking treatment have had ADHD since childhood, but went unnoticed.

— — — — — — — —

Pain Relief:
Thinking positive images—e.g. sexual fantasies can relieve pain per US researchers... Emotions are processed by the thalamus which has a role in perceiving physical pain... Peter Staatz, anesthesiologist at St. Johns in Baltimore is the study lead author. Staatz and colleagues studied the pain thresholds of 40 college students who were asked to keep their hands in a tank of ice water until the pain became unbearable. Those who thought sexual fantasies were able to keep their hands submerged twice as long and experienced less anxiety, anger and depression...

Viagra:
Pfizer's blue pill may do more than revive a flaccid love life. Viagra can restore normal digestion to millions of diabetics with gastroparesis: (bloating, loss of appetite, vomiting and dehydration)—at least in mice. The researchers plan to start human trials...

Hair Today
Razor titan Gillette and partner Bristol Myers Squibb are promoting VANIQA, a prescription cream approved by FDA that zaps unwanted facial hair on women... Possible side effects: rash, redness and acne...

— — — — — — — —

Seizures:
Roughly 125,000 Americans have seizures each year—half of them will be children and adolescents...

Seizures in children under age 5 are normally the result of high fevers, but 25,000 to 45,000 children have non-febrile seizures and are diagnosed as epilepsy...

The American Academy of Neurology, the Child Neurology Society and the American Epilepsy Society have jointly recommended an EEG on all children who have non-febrile seizures.

Unfortunately half of the epileptics have normal EEG's and even those others who never had seizures will show abnormal EEG's. Most studies suggest EEG in the first 24 hours... Any suspected serious brain disorder requires an MRI...

— — — — — — — —

Knee Injuries:
A major study (involving 1,200 physicians for 40 years) shows that knee injuries early in life leads to a five fold increase in risk of developing arthritis by age 65. The researchers suggest using knee braces and avoiding the injurious activity...

Rx Renal CA:
An experimental bone marrow transplant may help beat kidney cancer which kills half its victims within a year. Stem cells are collected from bone marrow and when transplanted generate a new immune system which fights off the cancer. The technique has been tried on 19 terminal patients. Ten died (two from the treatment itself), but the others saw their malignancy shrink or disappear...

Dog Days:
During 1997 and 1998, 9 million Americans were bitten by dogs, 27 fatally... Half the fatalities were caused by Pit Bulls and Rottweilers. What to do? Stand still, don't scream, avoid eye contact and don't smile...A dog interprets smiling as tooth baring, a signal that you are about to launch an attack of your own...

A Kinder, Gentler Death:
"Dying is one of the few events in life certain to occur... And yet one we are not likely to plan for...

We spend more time getting ready for two weeks away from work than for our last two weeks on earth...

We die only once—and for so long! So we should choose to die well...

Americans say they want to die at home, instead 3/4 die in medical institutions...

1/3 of the dying spend at least 10 days in ICU...

Specialists say 95% of pain in terminally ill people can be mollified...but studies show that nearly 1/2 of Americans die in pain, surrounded by strangers...

We plan assiduously for retirement, but 1/3 of Americans bankrupt their families in the process of dying...

One in 10 dying Americans said in a survey that their wishes were ignored...

Exit Strategies:
1.Communicate your wishes: Get a trusted lawyer... Get a living trust (protect assets while alive).
2.Advance directives (living wills).
3.Know what you're insured for Long term insurance (LTCI)
4.Tie up loose ends...

John Cloud, TIME Sept 2000

— — — — — — — —

Apple a Day:
A Study funded by apple growers suggests that 12 oz. of apple juice a day may delay plaque formation in arteries (Apple juice like wine has powerful antioxidants viz flavanoids like wine)

— — — — — — — —

Rap on Pap:
Women with slightly abnormal pap smears are advised to repeat the pap in six months or have colposcopy (expensive procedure). A major study has shown that testing for the human papilloma virus may be a third alternative...

Continues on next page

A Drink a Day:
Moderate alcohol consumption viz "a drink a day" lowers the risk of heart disease. Researchers now say that man with a gene that slows alcohol metabolism raises HDL cholesterol especially in white males.

— — — — — — — —

ALTERNATIVE HEALING:
A 1997 survey published in JAMA estimates that in 1996, 4 in ten Americans used medication or massage paying 27 million dollars... There are some alternative therapies which can be effective in certain conditions...

reAccupunture: A 1997 NIH consensus conference reported that accupunture is effective for nausea after surgery or chemotherapy and during pregnancy... Also it may be helpful for headaches, asthma, stroke rehab and fibromyalgia...

In a trial of accupunture for chronic pain by Finland's National Health Service, 65% of patients stopped pain killing drugs or reduced their dosage. Researchers feel that the needle prompts the release of endorphins or hormones stimulating the immune system...

reHypnosis: No one knows why, but hypnosis does seem to work for certain conditions. Researchers feel that hypnosis tricks the unconscious mind and controls pain perception. Hypnosis may help relieve stress related conditions such as asthma and irritable bowel syndrome... Scientists are studying hypnotism as a form of anesthesia or pain relief and its ability to speed healing.

reMagnet Therapy: Americans spent hundreds of millions of dollars in 1995 on magnets for ailments, for example, back pain and carpotunnel syndromes... Studies so far has been too limited to say for sure whether magnets work or not... Vanderbilt research scientist Dr. Robert Holcomb's research seems to indicate that magnets stop transmission of pain impulses at the cell level...

reMassage: Massage eases disorders by relieving tension, promoting blood flow, loosening muscle tension and calming the nervous system. Researcher Maria Hernandez Reif of the the University of Miami's Touch Research Institute states: "The Institute has found evidence that massage reduces the stress hormone Cortisol and allows the immune system to spring back."

reBiofeed Back: The Patient uses a machine to measure brain waves and to recognize and control those signals previously unrecognized... Biofeed back machines include those that measure skin temperature, EKG's and electromyographs which evaluate muscle tension. Another machine measures EEG feedback. Scientists cannot explain how biofeedback works, but it has helped some people with migraine, digestive disorders, abnormal heart beats, chronic pain, high and low blood pressure and spinal cord injuries... Neurofeed back has a 25 year history of helping epileptics, control seizures and in children with attention deficit hyperactivity...

Schering/Key Pharmaceutical

Claritin-D 12 Hour
(5 mg loratadine/120 mg pseudoephedrine sulfate, USP)
Extended Release Tablets

Claritin-D 24 Hour
(10 mg loratadine/240 mg pseudoephedrine sulfate, USP)
Extended Release Tablets

Claritin RediTabs
10 mg (loratadine rapidly-disintegrating tablets)

Claritin Syrup
(loratadine) 10 mg per 10 mL

Once-a-day nasonex (mometasone furoate monohydrate) Nasal Spray, 50 mcg

Claritin 10 mg TABLETS (loratadine)

Tequin gatifloxacin

Schering **Velvet Agena-Chee**
Senior Sales Representative
Voice Mail (800) 782-2347
Box 3858

Schering **Donn keoki Arizumi**
Pharmaceutical Representative
Voice Mail (800) 544-5420
Box 8058

KEY **Shawn Brady**
Sales Representative
Telephone (808) 387-1409
Voice Mail (800) 554-5420
Box 1342
FAX (808) 373-1772
E-Mail shawn.brady@spcorp.com

Schering **Mark Buquoi**
Sales Representative
Telephone (808) 384-3862
Voice Mail (800) 544-5420
Box 9795
FAX (808) 841-6105

Schering **Dennis M. Hamamura**
Senior Pharmaceutical Rep.
Telephone (808) 671-0225
Voice Mail (800) 544-5420
Box 8774
FAX (808) 671-0817

KEY **Carol K. Honda**
Sales Representative
Voice Mail (800) 554-5420
Box 8322
FAX (808) 593-1776

Schering **Rachelle Hyde**
Sales Representative
District Trainer
Voice Mail (800) 782-2347
Box 3861

KEY **Caroline Perry**
Sales Representative
Voice Mail (800) 554-5420
Box 1274
E-Mail Caroline.perry@spcorp.com

Schering **Brian Souza**
District Account Representative
Telephone (808) 394-9475
Voice Mail (800) 554-5420
Box 6811
FAX (808) 394-9475
E-Mail brian.souza@spcorp.com

"Medical School Hotline," continued from p. 161

and would welcome other disciplines to also devote some of their limited educational time to this important topic.

References

1. Stewart, M., J. Brown, A. Donner, I. McWhinney, J. Oates, W. Weston, & J. Jordan. "The Impact of Patient-Centered Care on Outcomes." Journal of Family Practice, Sept. 2000, Vol. 49, No. 9.
2. Nuland, Sherwin B. How We Die. New York: Alfred A. Knopf, Inc., 1993: 222-241.
3. Hemingway, E. "Indian Camp." In Reynolds, R. & Stone, J. On Doctoring New York: Simon and Shuster, 1991: 139-142.
4. Bontemps, A. "A Summer Tragedy." In Reynolds, R. and Stone, J. On Doctoring New York: Simon and Shuster, 1991: 143-151.
5. Stewart, M., Brown, J.B., Weston, W.W., et al. Patient-Centered Medicine; Transferring the Clinical Method, Thousand Oaks, CA. Sage Publications; 1995: 59-69.
6. Hilfiker, D. "Mistakes." In Reynolds, R. and Stone, J. On Doctoring New York; Simon and Shuster, 1991: 376-387.
7. Bauman, K. "Physician Suicide." Arch Fam Med. 1995; 4:672-3.

Continued from p. 155

commenting professionals should take particular care not to mislead their readers. This can occur even with careful footnoting, therefore, eye-catching sensational languages really has no place in scientific/medical reporting.

References

1. Yanagi M, Purcell RH, Emerson SU et al, "Full-length cDNA clone of Hepatitis C transfected into chimpanzee's liver." PNAS USA 1997; 94:8738-43.
2. Kolykholv AA, Agpov EV, Blight KJ et al, "Transmission of hepatitis C by intra-hepatic inoculation with transcribed RNA " Science 1997; 277:570-74.

Editor's Comment

Thank you Naoki Tsai, M.D., for your commentary and review of the Internet news item that has apparently reached many people around the world. As Dr. Tsai state "eye-catching sensational language really has no place in scientific/medical reporting.

Aloha Laboratories, Inc.
...When results count

CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

David M. Amberger, M.D.
Laboratory Directory

Phone: (808) 842-6600
Fax: (808) 848-0663
E-Mail: results@alohalabs.com
http://www.alohalabs.com

WE COLLECT PAST DUE ACCOUNTS

Only 25%* fee for Health Care Firms!

Why give up more!

Wood & Tait

HI Collection & Detective Agency
Staff on Kauai, Oahu, Maui, & Hawaii
http://www.woodtait.com

739-0433

jwood@woodtait.com

*Applies to accounts assigned during this promotion; no restrictions as to dollar size or age of accounts. Fee will increase to 50% if litigation or forwarding required; you will receive a contract.

Classified Notices

To place a classified notice:

HMA members.–Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.

Nonmembers.–Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

[redacted]

LOCUM TENENS– Board Certified FP available for summer Locum Tenens office coverage. Please call Vadim Braslavsky, MD (913) 685-7494 or visit www.concentric.net/~locumdr/1.htm.

[redacted]

PHYSICIAN WANTED– Part-time. Growing primary care practice, expanding hours. Experience/board certification in primary care preferred. Hospital, after-hours call optional. Fax resume to 236-3238.

KAUAI– Seeking 2 BC/BE General OB/GYNs for Kauai Medical Clinic's 3 physician, 3 Certified Nurse Midwife collaborative OB/GYN team. Kauai Medical Clinic is a 65-physician multispecialty group affiliated with Wilcox Health System's 181-bed community hospital. Our opportunity offers excellent quality of life in a safe, beautiful, family oriented, rural community. Competitive salary, benefits and relocation package. Send/fax CV to: M. Keyes-Saiki, Kauai Medical Clinic, 3-3420 Kuhio Highway, Suite B, Lihue, HI, 96766-1098. Fax: (808) 246-1625. Phone (808) 246-1621. E-mail: mkeyes-saiki@wilcoxhealth.org

KAUAI– Seeking BC/BE General Neurologist for our two-member department, interests in movement disorders and/or epilepsy welcomed. Kauai Medical Clinic is a 65-physician multispecialty group affiliated with Wilcox Health System's 181-bed community hospital. Our opportunity offers excellent quality of life in a safe, beautiful, family oriented, rural community. Competitive salary, benefits and relocation package. Send/fax CV to: M. Keyes-Saiki, Kauai Medical Clinic, 3-3420 Kuhio Highway, Suite B, Lihue, HI, 96766-1098. Fax: (808) 246-1625. Phone (808) 246-1621. E-mail: mkeyes-saiki@wilcoxhealth.org

The Weathervane Russell T. Stodd MD

Believe In My God Or I Will Kill You.
Sometimes one wonders just whom our courts are supposed to protect. An anti-abortion website lists names, photographs, doctors' home addresses, spouses and children, as well as personal and practice-related information. Professionals are listed as "working," "wounded," and "fatality." According to Judge Alex Kozinski of the 9th Circuit Court of Appeals, "If their statements merely encouraged unrelated terrorists, then their words are protected by the First Amendment." In the strongest terms the American Medical Association by its President-elect Richard Corlin, MD, asks Judge Kozinski "should any group have the freedom to terrorize and intimidate law-abiding citizens of our nation?" Wake up, Judge! Remove your head from that dark place, and recognize your duty to protect professionals and others who are living and working according to the law.

Sooner Or Later The Worst Set Of Circumstances Is bound To Occur.
A 61 year old woman while in the hospital, developed acute breathing problems. Her daughter rushed to the nurse's station, but could find no one. She searched for help, but assistance was delayed because the hospital had reduced the nursing staff after a decrease in federal Medicaid reimbursements. Many hospitals are cutting the ratio of nurses to patients. In this case, the patient suffered brain damage. A subsequent lawsuit alleging lack of monitoring due to short staffing, brought a settlement of $2.7 million.

Paranoia Will Destroiya.
A railroad engineer in Texas was married with a daughter and four sons when he was divorced from his wife in 1996. The court granted him visiting rights, and required monthly child support payments. Subsequently, the youngest son was afflicted with a disease that required genetic testing. It was accidentally determined that the engineer's daughter, the oldest child, was his, but that he had not fathered the three boys. When he tried to end child support for the boys, the court refused his request, and even cut off his visitation rights because he disobeyed the judge's order and discussed the matter with the children. The engineer insists that he still loves the boys, but he resents sending money to the mother. The Court ruled that fatherhood is more than genes, and the engineer is like any other divorced father. Additional comment on our new millennium ethos is that paternity tests conducted for "marital children" have revealed that 5 to 10% of the offspring are not by the presumed father.

Optical Delusions.
In 1994, Bausch & Lomb, Johnson & Johnson, CIBA Vision, several optometrists, and the American Optometric Association (AOA) encountered a class action suit brought by several plaintiffs and 32 state attorneys general, which alleged that B&L et al, conspired to restrict sales of contact lenses through alternative channels of distribution, such as pharmacies and mail-order companies. Now B&L and CIBA Vision admitted no wrongdoing, but agreed to settle with $120 rebates to eligible customers, and $8 million to a fund to cover the costs of lawsuit and attorneys fees. J&J appears to be deeper into the problem with a settlement of about $840 million, and legal expenses covered to the tune of $20 million. Moreover, they will provide contact lenses to alternative avenues for distribution. Apparently optometrists remain as defendants with trial scheduled in federal court. The lawyers win again!

Nothing Is Ever So Bad That It Can't Get Worse.
A woman in Winnipeg, Manitoba, is suing her surgeon. She complained that her middle finger would "lock up" occasionally, so the doctor attempted a surgical repair. Unfortunately, the result was that the finger became permanently extended. The patient complained that the stress of constantly giving people "the finger" had led to angina, and now she needs heart surgery.

Eat, Drink, And Be Wary.
An eye surgeon has written in *Review of Ophthalmology* that he refuses to care for patients for post operative problems of LASIK surgery performed elsewhere, unless specifically referred for consultation by the original surgeon. He reasons that the surgeon has a duty to provide adequate care and follow up regardless of the outcome, and that the patient has an obligation to select the correct surgeon. Au contraire! Yes, the surgeon certainly has an obligation to provide for comprehensive care, but how is the patient to know the "correct surgeon?" In these disturbing entrepreneurial medical times of radio, TV, magazine, newspaper ads, plus slick promos of surgeons's skill and experience, how is the patient to know whom to trust? More to the point, as ethical and moral physicians, each of us has a duty to do the best we can for the patient who is seeking help. Ophthalmologists once thought of themselves as royalty in the surgical arena, and now some behave more like street walkers or car salespersons.

Ah, Sweet Misery Of Life.
In the pending months, health-policy officials will be entangled in high-level debates regarding the use of federal money for studying embryonic stem-cell research. Anti-abortion groups have claimed a moral position against federal funding, but have ignored the fact that there is and will be a demand and supply of embryonic cells and fetal tissue research in the private sector. Dozens of scientific groups are using money from investors, biomedical charities and other sources to proceed. These private programs lack the scientific and ethical oversight that goes along with federal money, and that is a cause for concern among some observers and researchers. Although Congress in the mid 90s banned federal funding for research involving the destruction of embryos, last year the Clinton administration decided that the National Institutes of Health could sponsor stem-cell research. The limitation is that federally funded scientists can only work on stem cells acquired after they are removed from the embryos. Huh? The Bush administration is being heavily pushed on the issue from both sides. Arguing that embryos have rights, Scott Weinberg, speaking for the American Life League stated, "We oppose any form of research on embryonic persons in the private and public sector." Apparently, the possibility of generating nervous tissue and vital organs for the survival of afflicted persons is not considered sufficient reason to allow research on tissue that would otherwise be discarded. So, while American politicians and bureaucrats dither and dawdle, stem cell research is continuing in Israel, Singapore, Great Britain, Australia and many European countries.

Sometimes A Little Brain Damage Can Help.
The field of refractive surgery gets more flustered, feverish and frantic every day. Now a company called *Presby Corp.* is doing research with four scleral implants about the size of a grain of rice placed in the anterior four quadrants a few millimeters adjacent to the limbus. According to physicist ophthalmologist Ron Schacher, the implants mold the sclera and allow the underlying ciliary muscles more space to act on the lens, thus increasing accommodation for near vision. If the surgery proves successful, and if the Food and Drug Administration approves, the potential demand could be huge. With so many baby boomers moving into middle age, the market for reading correction could easily dwarf the $2 billion-a-year laser market. So far, only a handful of patients have had the procedure, and results are variable. Redness, discomfort, and in one case glaucoma, have occurred in the 29 patients operated at six U.S. sites in the *Presby* sponsored trial. However, 500 procedures have been done in Mexico, South Korea and other locations outside of FDA control, and results are stated to be "promising." The federal agency is reviewing a request for a much larger trial. Some apprehension about results in the early trials is that much of the stock in *Presby Corp.* is owned by the investigators. Of course, that wouldn't influence their interpretation of data, would it?

ADDENDA
- ❖ The eyes of a bird outweigh the brain.
- ❖ During oral examination, subjects blink very little during the question, but often blink frequently when they begin to reply.
- ❖ The frequency of surgical breast enlargement increased by 90% between 1997 and 1999.
- ❖ Carne diem: seize the meat.

Aloha and keep the faith —rts■

Contents of this column do not necessarily reflect the opinion or position of the Hawaii Ophthalmological Society. Editorial comment is strictly that of the writer.



Checked your practice lately?

You strive to be the best practitioner you can. You stay current in your field. You spend countless hours checking on the health of your patients.

Who is checking on the health of your practice?

Is your business thriving? Should you understand the cash flow side of your business better than you do?

TeamPraxis manages the business side of medicine. We optimize your:

- ***CPT coding.***
- ***Patient billing and collection.***
- ***A/R management.***
- ***Cash flow.***
- ***Work flow management.***

Give us a call to get a free consultation.

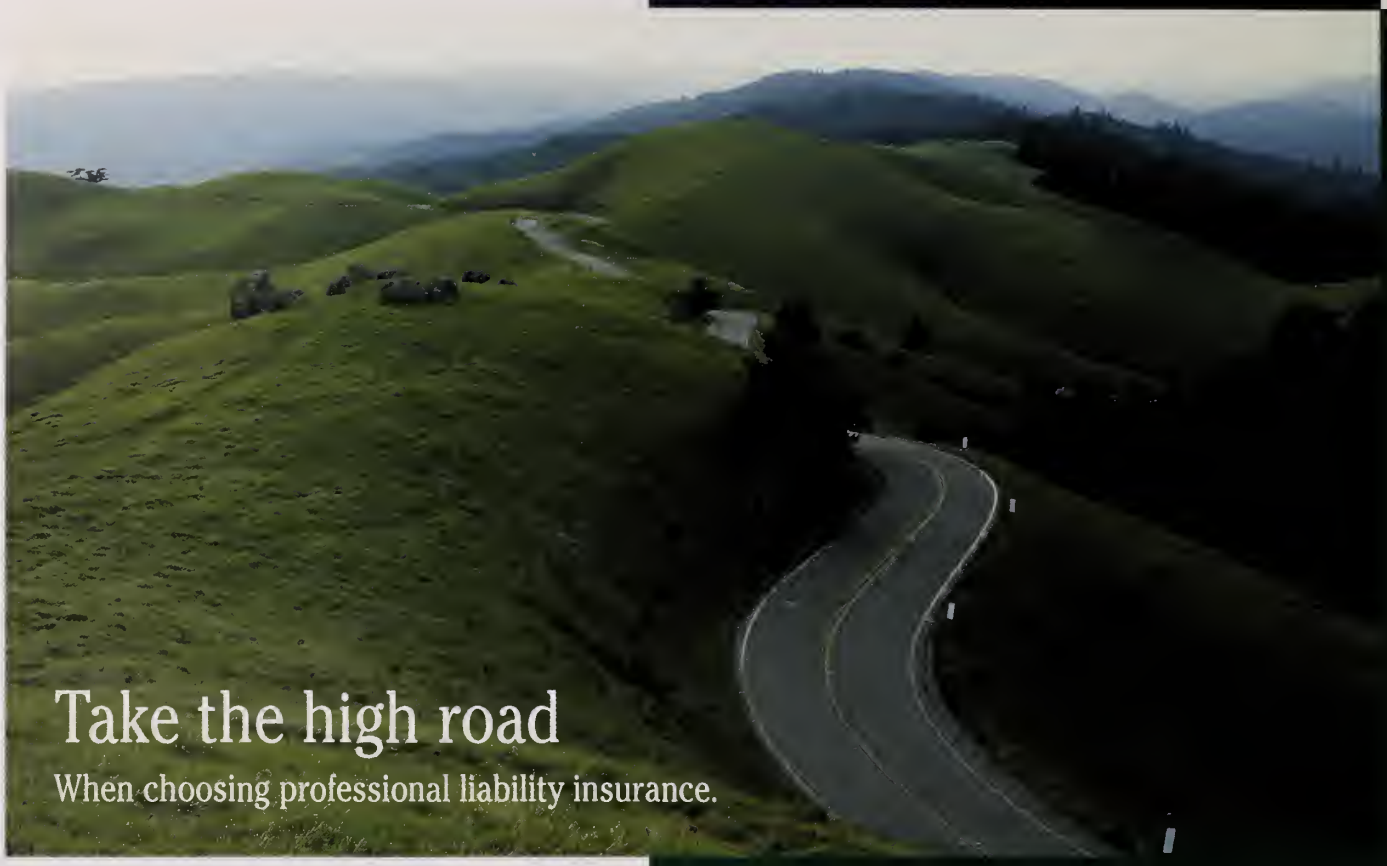
TeamPraxis™

Your practice management team.

948-9343

Neighbor Islands, call
866-TPRAXIS
(866-877-2947)

www.TeamPraxis.com



Take the high road

When choosing professional liability insurance.

NO RATE INCREASE IN 2001

MIEC

Medical Insurance Exchange of California

6250 Claremont Avenue
Oakland, California 94618
800-227-4527
www.miec.com

HAWAII CLAIMS OFFICE:
1360 South Beretania Street,
Honolulu, Hawaii 96814

Rated "A" (Excellent) by A.M. Best

Sponsored by the Hawaii Medical Association

THE SAFEST ROUTE IS
WITH AN EXPERIENCED GUIDE.

In Hawaii, that's MIEC. We are the West's first physician-owned, not-for-profit professional liability insurer. For more than [illegible]e've protected [illegible]ure coverage. unsurpassed, [illegible]d of returning [illegible]olicyholders, [illegible] operating results permit. We've returned over $200 million.

Hawaii medical journal
v. 60
no. 6
June 2001
Received on: 07-10-01
Brown University Library
SCI

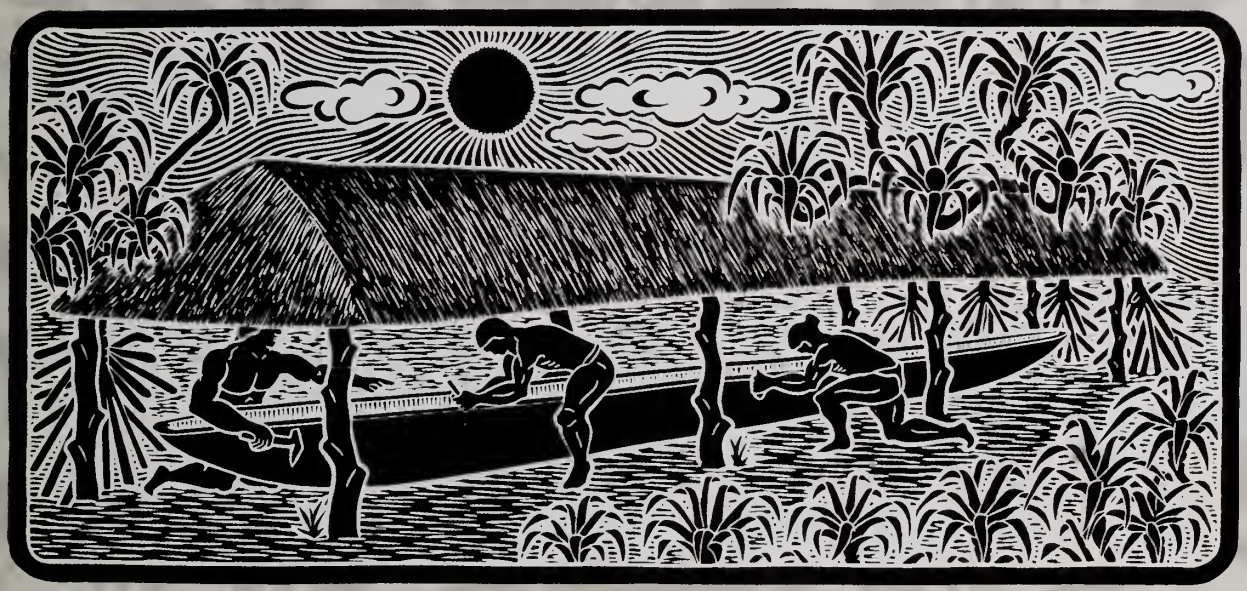
Professional liability insurance is a long-term business relationship. At MIEC, we take this commitment seriously.

Choose the genuine original, MIEC.

HAWAII MEDICAL JOURNAL

1-SIZE
R15
H25x
SCI

July 2001 Volume 60, No. 7 ISSN: 0017-8594



**********MIXED ADC 967
Serials Dept
Sciences Library
Box I
Brown University
Providence, RI 02912-0001

HAWAII MEDICAL ASSOCIATION
1856


1% ONCE A DAY
Noritate™
(metronidazole cream) Cream, 1%
PSORCON®e
(diflorasone diacetate cream) 0.05%
(diflorasone diacetate ointment) 0.05%
BENZAMYCIN® Topical Gel
(3% erythromycin, 5% benzoyl peroxide)
Klaron®
(sodium sulfacetamide lotion) 10%
DERMIK
Innovation that makes a world of difference
Our Mission: To become a global leader in providing innovative dermatological products to patients and healthcare providers.
To learn more, call 1.610.454.8110, or visit our site on the World Wide Web at http://www.dermik.com
Platinum Benefactor
Honor Society
Dermik Laboratories supports research in skin care through a grant to the Dermatology Foundation
DERMIK LABORATORIES, INC.
Dedicated to Dermatology™
A RHÔNE-POULENC RORER COMPANY

Our pledge to you

As Straub physicians, we welcome your referrals... and pledge to:

- Report our evaluation to you promptly by phone, fax or mail (whatever you prefer).
- Never make secondary referrals without your approval.
- Always direct the patient back to you for continuing care.

To make your referrals easy, we have a Physician Referral Specialist, Kym Kaohi. To contact Kym and to get a binder on Straub specialists and services, call 522-4444.





Straub
Partners in health
straubhealth.com

For assistance, call Kym at 522-4444

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
John Breinich MLS, Satoru Izutsu PhD,
James Lumeng MD, Douglas G. Massey MD,
Myron E. Shirasu MD, Frank L. Tabrah MD,
Alfred D. Morris MD

Journal Staff
Editorial Assistant: Drake Chinen

Officers
President: Philip Hellreich MD
President-Elect: Gerald McKenna MD
Secretary: Calvin Wong MD
Treasurer: Paul DeMare MD
Past President: James Lumeng MD

County Presidents
Hawaii: David Camacho MD
Honolulu: William McKenzie MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Gardner Quarton MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 2001 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 174

Of Mice and Mongooses... A History of Leptospirosis Research in Hawaii
Charles R. Middleton MS, Vernon E. Ansdell MD, FRCP, DTM&H and David Sasaki DVM, MPH 179

Medical School Hotline
Patrice M.L. Tim Sing MD and Martina L. Kamaka MD 187

Cancer Research Center Hotline
Carolyn Cook Gotay PhD 189

News and Notes
Henry N. Yokoyama MD 190

Classified Notices 193

Weathervane
Russell T. Stodd MD 194



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

Halau Wa'a

A scene depicting a typical Hawaiian canoe shed or "Halau Wa'a."

Editorial

Norman Goldstein MD
Editor, Hawaii Medical Journal

Of Mice and Mongooses...

Yes, mongooses is correct, but mongeese is also acceptable. The term mongoose first appeared in English literature in 1698, adapted from the Hindu term "mangusa."

This monumental manuscript on leptospirosis by Middleton, Ansdell and Sasaki will be a valuable paper of interest to a wide variety of readers, including historians, clinicians, veterinarians, public health authorities, parasitologists, as well as for the recreational public involved in swimming, hiking, and camping in Hawaii. Leptospirosis is an expensive disease, sometimes fatal, and often requiring prolonged patient care.

It is a superb review of the history and present problem of leptospirosis in Hawaii. The authors dedicated the manuscript to Henri Minette, DrPH (1916-2001), who worked for the Hawaii State Department of Health for 56 years. It also serves as a testimonial to the subsequent directors of the Department of Health, including the present Director, Bruce Anderson, and their staffs. Medical progress is being made right here in Hawaii.

Mahalo to medical student Charles Middleton and Drs. Ansdell and Sasaki for their contributions to local residents and visitors alike.

HIPAA - Here We Come! Practical information about your practice

If you were unable to attend the HMA General Meeting on June 1, 2001, you missed a great deal of important information about your practice.

Susan Forbes PhD, Executive Director of the Hawaii Health Information Corporation, provided participants with news concerning the Health Insurance Portability and Accountability Act.

Dr. Forbes reviewed the Federal Standards for Privacy of Patient Health Information. Because this topic pertains to consent/authorization forms, medical records, billing for insurance purposes, etc., you and your staff must by law be aware of these HIPAA regulations for insurance purposes.

The Journal will publish her presentation in an upcoming issue of the HMJ.

We Need Your Biography

Even if it is not up to date, send us your bio/resume. We are all usually too busy to have a truly current bio or resume, but send Dr. Ann Catts what you have available now. You can always update it later.

Many thanks to Ann and the staff at the Mamiya History Center at the Hawaii Medical Library for their efforts in getting and keeping biographical data of physicians in Hawaii.

Ask your spouse, your office manager or your secretary to send your biography (a form is also provided on the pp.177-178 for your use.)

No one knows you and your life experiences better than you. We need to know about you.

Aloha Laboratories, Inc.
...When results count

CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

David M. Amberger, M.D.
Laboratory Directory

Phone: (808) 842-6600
Fax: (808) 848-0663
E-Mail: results@alohalabs.com
http://www.alohalabs.com

WE COLLECT PAST DUE ACCOUNTS

Only 25%* fee for Health Care Firms!
Why give up more!

Wood & Tait

HI Collection & Detective Agency
Staff on Kauai, Oahu, Maui, & Hawaii
http://www.woodtait.com

739-0433

jwood@woodtait.com

*Applies to accounts assigned during this promotion; no restrictions as to dollar size or age of accounts. Fee will increase to 50% if litigation or forwarding required; you will receive a contract.

Until there's a cure, there's the American Diabetes Association.


dramatically
different
Protopic
60g
Protopic
30g
To learn more, visit www.protopic.com

BRIEF SUMMARY

47002/Issued: December 2000

Protopic®
(tacrolimus)

Ointment 0.03%
Ointment 0.1%

FOR DERMATOLOGIC USE ONLY
NOT FOR OPHTHALMIC USE

INDICATIONS AND USAGE:
PROTOPIC Ointment, both 0.03% and 0.1% for adults, and only 0.03% for children aged 2 to 15 years, is indicated for short-term and intermittent long-term therapy in the treatment of patients with moderate to severe atopic dermatitis in whom the use of alternative, conventional therapies are deemed inadvisable because of potential risks, or in the treatment of patients who are not adequately responsive to or are intolerant of alternative, conventional therapies.

CONTRAINDICATIONS:
PROTOPIC Ointment is contraindicated in patients with a history of hypersensitivity to tacrolimus or any other component of the preparation.

PRECAUTIONS:
General

Studies have not evaluated the safety and efficacy of PROTOPIC Ointment in the treatment of clinically infected atopic dermatitis. Before commencing treatment with PROTOPIC Ointment, clinical infections at treatment sites should be cleared.

While patients with atopic dermatitis are predisposed to superficial skin infections including eczema herpeticum (Kaposi's varicelliform eruption), treatment with PROTOPIC Ointment may be associated with an increased risk of varicella zoster virus infection (chicken pox or shingles), herpes simplex virus infection, or eczema herpeticum. In the presence of these infections, the balance of risks and benefits associated with PROTOPIC Ointment use should be evaluated.

In clinical studies, 33 cases of lymphadenopathy (0.8%) were reported and were usually related to infections (particularly of the skin) and noted to resolve upon appropriate antibiotic therapy. Of these 33 cases, the majority had either a clear etiology or were known to resolve. Transplant patients receiving immunosuppressive regimens (e.g., systemic tacrolimus) are at increased risk for developing lymphoma; therefore, patients who receive PROTOPIC Ointment and who develop lymphadenopathy should have the etiology of their lymphadenopathy investigated. In the absence of a clear etiology for the lymphadenopathy, or in the presence of acute infectious mononucleosis, discontinuation of PROTOPIC Ointment should be considered. Patients who develop lymphadenopathy should be monitored to ensure that the lymphadenopathy resolves.

The enhancement of ultraviolet carcinogenicity is not necessarily dependent on phototoxic mechanisms. Despite the absence of observed phototoxicity in humans (see **ADVERSE REACTIONS**), PROTOPIC Ointment shortened the time to skin tumor formation in an animal photocarcinogenicity study (see **Carcinogenesis, Mutagenesis, Impairment of Fertility**). Therefore, it is prudent for patients to minimize or avoid natural or artificial sunlight exposure.

The use of PROTOPIC Ointment may cause local symptoms such as skin burning (burning sensation, stinging, soreness) or pruritus. Localized symptoms are most common during the first few days of PROTOPIC Ointment application and typically improve as the lesions of atopic dermatitis heal. With PROTOPIC Ointment 0.1%, 90% of the skin burning events had a duration between 2 minutes and 3 hours (median 15 minutes). Ninety percent of the pruritus events had a duration between 3 minutes and 10 hours (median 20 minutes). The use of PROTOPIC Ointment in patients with Netherton's Syndrome is not recommended due to the potential for increased systemic absorption of tacrolimus. The safety of PROTOPIC Ointment has not been established in patients with generalized erythroderma.

Information for Patients
(See patient package insert)
Patients using PROTOPIC Ointment should receive the following information and instructions:

1. Patients should use PROTOPIC Ointment as directed by the physician. PROTOPIC Ointment is for external use only. As with any topical medication, patients or caregivers should wash hands after application if hands are not an area for treatment.
2. Patients should minimize or avoid exposure to natural or artificial sunlight (tanning beds or UVA/B treatment) while using PROTOPIC Ointment.
3. Patients should not use this medication for any disorder other than that for which it was prescribed.
4. Patients should report any signs of adverse reactions to their physician.
5. Before applying PROTOPIC Ointment after a bath or shower, be sure your skin is completely dry.

Drug Interactions
Formal topical drug interaction studies with PROTOPIC Ointment have not been conducted. Based on its minimal extent of absorption, interactions of PROTOPIC Ointment with systemically administered drugs are unlikely to occur but cannot be ruled out. The concomitant administration of known CYP3A4 inhibitors in patients with widespread and/or erythrodermic disease should be done with caution. Some examples of such drugs are erythromycin, itraconazole, ketoconazole, fluconazole, calcium channel blockers and cimetidine.

Carcinogenesis, Mutagenesis, Impairment of Fertility
No evidence of genotoxicity was seen in bacterial (*Salmonella* and *E. coli*) or mammalian (Chinese hamster lung-derived cells) *in vitro* assays of mutagenicity, the *in vitro* CHO/HGPRT assay of mutagenicity, or *in vivo* clastogenicity assays performed in mice. Tacrolimus did not cause unscheduled DNA synthesis in rodent hepatocytes.

Reproductive toxicology studies were not performed with topical tacrolimus.

Pregnancy:
Teratogenic Effects: Pregnancy Category C
There are no adequate and well-controlled studies of topically administered tacrolimus in pregnant women. The experience with PROTOPIC Ointment when used by pregnant women is too limited to permit assessment of the safety of its use during pregnancy.

There are no adequate and well-controlled studies of systemically administered tacrolimus in pregnant women. Tacrolimus is transferred across the placenta. The use of systemically administered tacrolimus during pregnancy has been associated with neonatal hyperkalemia and renal dysfunction. PROTOPIC Ointment should be used during pregnancy only if the potential benefit to the mother justifies a potential risk to the fetus.

Nursing Mothers
Although systemic absorption of tacrolimus following topical applications of PROTOPIC Ointment is minimal relative to systemic administration, it is known that tacrolimus is excreted in human milk. Because of the potential for serious adverse reactions in nursing infants from tacrolimus, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.

Pediatric Use
PROTOPIC Ointment 0.03% may be used in pediatric patients 2 years of age and older. Two phase 3 pediatric studies were conducted involving 606 patients 2-15 years of age: one 12-week randomized vehicle-controlled study and one open-label, 1 year, long-term safety study. Three hundred and thirty (330) of these patients were 2 to 6 years of age.

The most common adverse events associated with PROTOPIC Ointment application in pediatric patients were skin burning and pruritus (see **ADVERSE REACTIONS**). In addition to skin burning and pruritus, the less common events (< 5%) of varicella zoster (mostly chicken pox), and vesiculobullous rash were more frequent in patients treated with PROTOPIC Ointment 0.03% compared to vehicle. In the long-term 1 year safety study involving 255 pediatric patients using PROTOPIC Ointment, the incidence of adverse events, including infections, did not increase with increased duration of study drug exposure or amount of ointment used. In 491 pediatric patients treated with PROTOPIC Ointment, 3(0.6%) developed eczema herpeticum. Since the safety and efficacy of PROTOPIC Ointment have not been established in pediatric patients below 2 years of age, its use in this age group is not recommended.

Geriatric Use
Twenty-five (25) patients ≥ 65 years old received PROTOPIC Ointment in phase 3 studies. The adverse event profile for these patients was consistent with that for other adult patients.

ADVERSE REACTIONS:

No phototoxicity and no photoallergenicity was detected in clinical studies of 12 and 216 normal volunteers, respectively. One out of 198 normal volunteers showed evidence of sensitization in a contact sensitization study.

In three randomized vehicle-controlled studies and two long-term safety studies, 655 and 571 patients respectively, were treated with PROTOPIC Ointment.

The following table depicts the adjusted incidence of adverse events pooled across the 3 identically designed 12- week studies for patients in vehicle, PROTOPIC Ointment 0.03%, and PROTOPIC Ointment 0.1% treatment groups, and the unadjusted incidence of adverse events in two one year long-term safety studies, regardless of relationship to study drug.

Incidence Of Treatment Emergent Adverse Events

	12-Week, Randomized, Double-Blind, Phase 3 Studies 12-Week Adjusted Incidence Rate (%)					Open-Label Studies (up to 1 year) 0.1% Tacrolimus Ointment Incidence(%)	
	Adult			Pediatric		Adult	Pediatric
	Vehicle n=212	0.03% Tacrolimus Ointment n=210	0.1% Tacrolimus Ointment n=209	Vehicle n=116	0.03% Tacrolimus Ointment n=118	n=316	n=255
Skin Burning†	26	46	58	29	43	47	26
Pruritus†	37	46	46	27	41	25	25
Flu-like symptoms‡	19	23	31	25	28	22	35
Allergic Reaction	8	12	6	8	4	22	15
Skin Erythema	20	25	28	13	12	12	9
Headache†	11	20	19	8	5	10	18
Skin Infection	11	12	5	14	10	11	11
Fever	4	4	1	13	21	2	18
Infection	1	1	2	9	7	14	8
Cough Increased	2	1	1	14	18	3	15
Asthma	4	6	4	6	6	5	16
Herpes Simplex	4	4	4	2	0	12	5
Eczema Herpeticum	0	1	1	0	2	2	0
Pharyngitis	3	3	4	11	6	5	10
Accidental Injury	4	3	6	3	6	4	12
Pustular Rash	2	3	4	3	2	6	8
Folliculitis†	1	6	4	0	2	11	2
Rhinitis	4	3	2	2	6	5	5
Otitis Media	4	0	1	6	12	1	7
Sinusitis‡	1	4	2	8	3	3	7
Diarrhea	3	3	4	2	5	4	6
Urticana	3	3	6	1	1	5	5
Lack of Drug Effect	1	1	0	1	1	10	2
Bronchitis	0	2	2	3	3	3	6
Vomiting	0	1	1	7	6	1	5
Maculopapular Rash	2	2	2	3	0	4	3
Rash†	1	5	2	4	2	2	5
Abdominal Pain	3	1	1	2	3	1	5
Fungal Dermatitis	0	2	1	3	0	2	6
Gastroenteritis	1	2	2	3	0	4	2
Alcohol Intolerance†	0	3	7	0	0	6	0
Acne†	2	4	7	1	0	2	4
Sunburn	1	2	1	0	0	4	4
Skin Disorder	2	2	1	1	4	1	4
Conjunctivitis	0	2	2	2	1	4	2
Pain	1	2	1	0	1	4	3
Vesiculobullous Rash‡	3	3	2	0	4	2	2
Lymphadenopathy	2	2	1	0	3	2	3
Nausea	4	3	2	0	1	1	2
Skin Tingling†	2	3	8	1	2	2	1
Face Edema	2	2	1	2	1	3	1
Dyspepsia†	1	1	4	0	0	1	4
Dry Skin	7	3	3	0	1	0	1
Hyperesthesia†	1	3	7	0	0	3	0
Skin Neoplasm Benign‡‡	1	1	1	0	0	2	3
Back Pain†	0	2	2	1	1	3	1
Peripheral Edema	2	4	3	0	0	2	1
Varicella Zoster/ Herpes Zoster‡	0	1	0	0	5	1	3
Contact Dermatitis	1	3	3	3	4	1	1
Asthenia	1	2	3	0	0	2	1
Pneumonia	0	1	1	2	0	1	2
Eczema	2	2	2	0	0	3	0
Insomnia	3	4	3	1	1	1	0
Exfoliative Dermatitis	3	3	1	0	0	0	2
Dysmenorrhea	2	4	4	0	0	0	2
Periodontal Abscess	1	0	1	0	0	3	0
Myalgia†	0	3	2	0	0	1	0
Cyst‡	0	1	3	0	0	0	0

† May be reasonably associated with the use of this drug product

‡ Four cases of chicken pox in the pediatric 12-week study; 1 case of "zoster of the lip" in the adult 12-week study; 7 cases of chicken pox and 1 case of shingles in the open-label pediatric study; 2 cases of herpes zoster in the open-label adult study

‡‡ Generally "warts"

Other adverse events which occurred at an incidence greater than or equal to 1% in any clinical study include: alopecia, ALT or AST increased, anaphylactoid reaction, angina pectoris, angioedema, anorexia, anxiety, arrhythmia, arthralgia, arthritis, bilirubinemia, breast pain, cellulitis, cerebrovascular accident, cheilitis, chills, constipation, creatinine increased, dehydration, depression, dizziness, dyspnea, ear pain, ecchymosis, edema, epistaxis, exacerbation of untreated area, eye disorder, eye pain, furunculosis, gastritis, hernia, hyperglycemia, hypertension, hypoglycemia, hypoxia, laryngitis, leukocytosis, leukopenia, liver function tests abnormal, lung disorder, malaise, migraine, neck pain, neuritis, palpitations, paresthesia, peripheral vascular disorder, photosensitivity reaction, procedural complication, routine procedure, skin discoloration, sweating, taste perversion, tooth disorder, unintended pregnancy, vaginal moniliasis, vasodilatation, and vertigo.

OVERDOSAGE:
PROTOPIC Ointment is not for oral use. Oral ingestion of PROTOPIC Ointment may lead to adverse effects associated with systemic administration of tacrolimus. If oral ingestion occurs, medical advice should be sought.

DOSAGE AND ADMINISTRATION:
ADULT
PROTOPIC Ointment 0.03% and 0.1%

Apply a thin layer of PROTOPIC Ointment 0.03% or 0.1% to the affected skin areas twice daily and rub in gently and completely. Treatment should be continued for one week after clearing of signs and symptoms of atopic dermatitis.

The safety of PROTOPIC Ointment under occlusion which may promote systemic exposure, has not been evaluated. **PROTOPIC Ointment 0.03% and 0.1% should not be used with occlusive dressings.**

PEDIATRIC
PROTOPIC Ointment 0.03%

Apply a thin layer of PROTOPIC Ointment 0.03% to the affected skin areas twice daily and rub in gently and completely. Treatment should be continued for one week after clearing of signs and symptoms of atopic dermatitis. The safety of PROTOPIC Ointment under occlusion, which may promote systemic exposure, has not been evaluated. **PROTOPIC Ointment 0.03% should not be used with occlusive dressings.**

Rx only

Fujisawa Healthcare, Inc.
Deerfield, IL 60015-2548
47002/Issued: December 2000

Fujisawa Healthcare, Inc.

©2001 Fujisawa Healthcare, Inc. PT127 6/01

Hawaii Physician's Biography

Name _____

Background:

Date of birth _____ Place of birth _____

Parent's Name _____

Siblings or other relatives if of special interest:

_____

_____

Education: Dates Location Degree

Elementary school _____

College/universities _____

_____

Postgraduate training _____

_____

Medical Training:

Medical School _____

Internship

Institution _____

Residency

Institutions _____

_____

_____

Postgraduate training

Institutions _____

_____

_____

Medical Career:

Private practice: Years/locations _____

_____

Affiliations: Institutions/years/locations _____

_____

Special positions: Institutions/years/locations _____

_____

Medical Society memberships _____

_____

Continues on next page

Specialty Boards _____ Year _____ Year

Licenses held: Locations Years

_____

_____

_____

If retired, year of retirement _____

Community Services:

Organizations: names / years / positions held / locations / political / fraternal / civic and/or social

_____

_____

_____

Honors and Awards:

Organizations: type / year/ purpose of recognition

_____

_____

_____

Personal:

Marriage/ marriages: name of spouse / date and place of wedding

_____

_____

Children: names and , in case of married daughters, husband's full name

_____

_____

_____

Special Interests:

Hobbies _____

_____

Talents other than medical _____

_____

If deceased:

Date / place _____

Survivors _____

_____

Return to:
Hawaii Physician's Biography
Ann B. Catts MD
Hawaii Medical Library
1221 Punchbowl Street
Honolulu, HI 96813

Of Mice and Mongooses... A History of Leptospirosis Research in Hawaii

Charles R. Middleton MS*, Vernon E. Ansdell MD, FRCP, DTM&H**, and David M. Sasaki DVM, MPH***

Abstract

A history of leptospirosis research in Hawaii is presented, beginning with the first published work in 1937. This account traces the leading researchers who described the organism and the disease, the diagnostic tests developed and used, the reservoir animals identified, methods of disease transmission discovered, prevention programs developed in the state, and research into more effective disease detection and prevention.

Introduction

Leptospirosis was first reported in Hawaii in 1907 in sugar cane workers. Since that time, it has been recognized in a wide range of agricultural workers, most recently in taro farmers. Over the past 50 years, it has been increasingly recognized as a recreational disease related to activities such as hiking, swimming, freshwater fishing and kayaking. Infection is caused by *Leptospira interrogans*, a coiled spirochete that is spread by environmental contamination of the urine of infected animals.

In Hawaii, wild animals such as rats, mice, and mongooses are the primary reservoirs of infection, harboring organisms in their kidneys and shedding them in their urine. Domestic animals, particularly dogs, and farm animals such as cattle and swine, are also important reservoirs of infection in residential and agricultural environments. This article highlights some of the extensive local research conducted over the past 60 years and emphasizes community educational programs to better understand and control this very important infectious disease.

Early Recognition of the Disease

Illnesses resembling leptospirosis have been described since ancient times. Castiglioni[1] quoted the famous Greek physician Hippocrates on a disease that possibly was leptospirosis: "When jaundice supervenes in fevers before the seventh day, it is a bad symptom, unless there be watery discharges from the bowels." In ancient China, rice harvest jaundice ("wei ni" and "lo ya goz fe") probably referred to leptospirosis. Similarly, in ancient Japan, 7-day fever ("odan-eki") and autumn fever ("aki yami") were names given to illnesses resembling leptospirosis.[2]

Correspondence to:
Charles R. Middleton MS
615 Lawelawe St.
Honolulu, HI 96821
Tel: 808-373-2774

The first detailed clinical accounts of illness resembling leptospirosis were in the early 19th century. Larrey[3] described an illness with fever and jaundice ("fiévre jaune") among Napoleon's troops during the siege of Cairo in 1800. This was probably leptospirosis. An early study of the disease was made by Adolf Weil, who named it "Infectious Jaundice" in a paper published in a German medical journal in 1886.[4] Two years later another German researcher, Fiedler, named it "Weil's Disease." Subsequently, physicians around the world referred to icteric leptospirosis as "Weil's Disease."

In 1914, Inada et. al.[5] made the important discovery of the causative organism of this disease. Noguchi in 1918[6] described the organism as being 6 to 20 microns long and 0.1 to 0.2 microns wide, a fine tightly wound spiral enclosing an axial filament, and noted that it was rapidly motile. The rat was the most recognized reservoir, but other species such as foxes, cats, pigs, horses, dogs and gophers were also identified as carriers.

Early Research in Hawaii

Leptospirosis was first recognized in Hawaii in sugar cane workers. The earliest medical reports were from plantation doctors. The first death attributed to Weil's Disease was reported to the Territorial Department of Health in 1907.[7] The Department of Health included leptospirosis as a reportable disease in the 1930's. Throughout the 1950's, however, the disease was reportable as "Weil's Disease," and not leptospirosis. For this period, the incidence was probably grossly understated as, currently, only about 25% of cases would fit the description of Weil's disease (febrile illness with jaundice).

Joseph E. Alicata, a parasitologist at the University of Hawaii, developed a diagnostic test for leptospirosis and was the first to detect the bacteria in animals and humans in Hawaii. He defined the epidemiology of leptospirosis among sugar workers on the island of Hawaii and in residents of Honolulu.

Early Studies in Humans

In 1937, Alicata published a case report documenting leptospirosis in a patient on the island of Hawaii.[7] Physician Thomas Keay from Pepe'ekeo Hospital, sent him a patient's urine sample which he inoculated into a guinea pig. Alicata subsequently identified the organism from kidney sections of the animal. In the same paper Fred Irwin described the treatment used at the time, which included administration of convalescent sera from recovered cases, or repeated blood transfusions. Prophylaxis consisted of sterilizing the

fecal and urinary discharges of patients, and "waging war against the rat." In 1939, James Enright and Eric Fennel[8] described Weil's Disease in a case report presented to the Sixth Pacific Science Congress. In the first human serosurvey in 1943, Alicata and Virginia Breaks[9] reported a 3.8% prevalence among 344 residents of urban Honolulu.

Discovery of Animal Reservoirs

Noguchi observed that many wild and domestic animals were thought to be reservoirs of leptospires in Asia.[6] Alicata showed that this new occupational health risk was carried by rats and mongooses on the island of Hawaii.[10] He also discovered that kidney cultures were more sensitive in detecting rodent infections than serology; but in mongooses, serology was more sensitive than culture for diagnosis of leptospirosis. In 1942, Alicata and Breaks[11] identified dogs (20% prevalence of 100 tested) in Honolulu as a reservoir of leptospires. In 1943, Alicata[12] developed a vaccine for dogs using formalized antigens. The early field studies in Hawaii were the beginning of an extensive series of investigations into transmission cycles involving various reservoir animals, fresh water and soil, and ultimately, humans.

Early Diagnostic Test Development

Alicata in 1942[13] published "The Diagnosis of Leptospirosis" in *Plantation Health*, describing clinical symptoms and laboratory findings in patients diagnosed serologically by the newly developed microscopic agglutination test (MAT).

Understanding Clinical and Epidemiologic Aspects of Leptospirosis: 1944-1986

Alicata's and Enright's early work increased the concern about the disease in the medical community in Hawaii. During this period, the most prominent researcher was Henri Minette, Administrator of the Department of Health (DOH) laboratory in Hilo. In addition to developing a leptospirosis diagnostic laboratory in Hilo, he was involved in many animal and human surveys. With Bruce S. Anderson, he published an important historical summary of studies conducted in Hawaii through 1984.[14] From the review of cases associated with sugar plantations, the need for better diagnostic tests and the scope of environmental sources of infection were addressed. In 1979, a DOH advisory committee was formed under the direction of Robert Melton, the Kauai District Health Officer, following two fatalities on the island in the late 1970's, including an aquaculture farmer in 1978. In the same year, a fatal case occurred in an aquaculture farmer on Oahu. At the time, current Director of Health Bruce S. Anderson was very interested in this new industry. He enrolled in a Ph.D. program at the University of Hawaii School of Public Health to study the epidemiology of leptospirosis in aquaculture and taro farmers under Professor of Epidemiology, Robert Worth. Anderson's studies were subsequently published by the DOH.[15,16]

Human Case Studies

In 1944,[10] Alicata reported a 12.2% prevalence among 860 plantation workers tested on the island of Hawaii. In the same year H. M. Patterson published a clinical review entitled "Weil's Disease, A Report of Thirty Seven Cases."[17] Three years later he published a larger review of 61 cases in the *Journal of the American Medical Association*.[18] These studies, carried out at Ola'a Hospital on the island of Hawaii, were based on cases among cane-cutters of Filipino and Japanese ancestry from Ola'a Plantation. He described the patients with Weil's Disease as "desperately ill" and unresponsive to sulfonamide compounds. He tried a second treatment consisting of blood transfusions from patients with prior infections. The patients responded dramatically and recovered. He also tried a third treatment, a new antibiotic – penicillin - on the last six patients in this series. It proved efficacious, leading to the rapid recovery of all six cases.

In 1977 W. A. Shrader reviewed 19 cases admitted to Honoka'a Hospital on Hawaii from 1962-1965.[19] He noted that many of the cases had been treated on an out-patient basis, indicating that there were mild forms of the disease that were often self-limiting. He also observed that the illness occurred in two phases, an early septicemic phase followed by a secondary immune phase.

In 1980, Mary Serdula, a U.S. Centers for Disease Control (CDC) Epidemic Intelligence Service Officer assigned to Hawaii, conducted a survey of people who lived and/or worked in Waipi'o valley on the island of Hawaii (unpublished data). Of 82 people sampled, 26 (32%) had significant MAT (≥1:200) titers. Taro farmers who did not live in the valley and residents of the valley who did not farm taro were identified as being at risk for the disease. This study also identified a hyperendemic geographic area, which continues to be a high risk location for people who live and work there.

Anderson and Minette reviewed 556 cases that were reported between 1936 and 1984:[14] 398 on Hawaii, 82 on Oahu, 53 on Kauai, 15 from Molokai and Lanai, and 8 from Maui. Case distribution by island has since changed; Kauai currently reports the second highest number of cases in the State and the highest incidence. Included in the review were surveys conducted by Anderson, James Brock, Harry Higa, John Gooch, Ned Wiebenga, Nicholas Palumbo, Sam Perri and Vernon Sato on aquaculture farmers, as part of Anderson's Ph.D. thesis.[15] He found an overall prevalence of 18.7% among 123 freshwater aquaculture farmers sampled statewide, documented a statistically-significant risk of exposure in aquaculture farmers on Oahu, and an extremely high annual incidence of 2.5/100 prawn farmers. Anderson, Higa, Brock, Serdula, Gooch, Wiebenga, Palumbo, and Minette identified a statewide prevalence of 60% in 55 taro farmers sampled, and in four of five watercress farmers tested,[16] documenting a high risk of infection for those engaged in freshwater occupations.

In 1984, State public health veterinarian David M. Sasaki, did his University of Hawaii Master of Public Health field work project at the CDC in Atlanta, Georgia. He conducted a descriptive epidemiologic analysis comparing cases of leptospirosis reported nationwide with those reported from Hawaii for the five years from 1979 to 1983.[20] During that time, Hawaii accounted for 22% (118/525) of the cases reported nationally and had an incidence 50 times higher than the rest of the country.

Animal Surveys

In 1947 Alicata[21] detected antibody titers in swine, identifying the animals as a reservoir and potential source of infection to humans. During this 43 year period, there were at least sixteen field studies of leptospires in feral reservoir animals. The primary species tested

in most of these studies were rats, including the Norway rat (*R. norvegicus),* the Roof rat (*R. rattus),*the Polynesian rat (*R. exulans).* The house mouse *Mus domesticus,* and the mongoose *(Herpestes auropunctatus)* were also frequently sampled. Anderson and Minette[14] summarized the data from the studies by island, species, number of animals tested and the percent positive. 7,645 small feral mammals were trapped and tested for leptospires during the 40-year period. Composite results for each species showed *R.. norvegicus* with a 30% prevalence, *R. rattus,* 23.6%; *R. exulans,* 17%; and *H. auropunctatus* with 29%. The island of Hawaii, because of the earlier recognition of leptospirosis in plantation workers and the presence of Minette's diagnostic laboratory, was the most actively investigated, accounting for 70% of the animals tested. 1,877 animals were tested on Oahu, and 332 on Maui. Minette's 1964 [22] and Marie Shimizu's 1984[23] studies described the largest surveys. An increased academic interest in the epidemiology of leptospirosis resulted in other animal studies. They included the aforementioned studies by Anderson et. al.,[15,16] who also examined rodent infection rates on aquaculture and taro farms, and Masters of Public Health student field work projects by Alan Zahn,[24] and Peter Yan.[25]

Gary F. Beck's Master of Public Health field work project in 1977 studied feral swine in Waimanu Valley on the island of Hawaii.[26] A 41% prevalence from 17 feral pigs sampled showed that feral swine were reservoirs of the disease.

Between 1983 and 1985, the State Department of Agriculture (DOA) in conjunction with the Southeastern Cooperative Wildlife Disease Study from the University of Georgia, conducted a survey of feral swine. In 1983, a 28% prevalence was noted from 134 animals sampled from the island of Hawaii. In the same year, an 82% prevalence was found in 56 samples from Molokai. In 1985, a 20% prevalence was noted in 10 samples from Maui. The samples were tested with the MAT.

Diagnostic Test Study

In 1945, Minette published a "A modified technique for reading the rapid slide agglutination test for leptospirosis" in *Science*,[27] describing his modification of that screening diagnostic test. This test was used by the DOH laboratory until 1992 when the test reagents were no longer commercially available.

Organized Research: 1987-2001

In 1987, then Director of Health John C. Lewin asked Sasaki to convene a committee to develop a comprehensive report, plan of action, and policy development for leptospirosis control in Hawaii. A community-based Leptospirosis Ad-Hoc Committee, sponsored by the DOH, was formed to promote community-wide participation in development of educational and control programs. State, city, federal, and private healthcare agencies have participated in the Committee from its beginning to the present. The Committee has sponsored epidemiologic and laboratory research, participated in scientific presentations at national and international meetings, published findings in peer-reviewed scientific journals, sponsored visits by internationally recognized experts, and developed a comprehensive health educational program that has gained international attention. In recent years, there has been an increased effort toward development of sensitive, rapid-screening serologic diagnostic tests for disease detection in humans through collaborations with the Royal Tropical Institute (RTI) in the Netherlands. Most of the published work on leptospirosis by local authors from this period was an outgrowth of the Ad-Hoc Committee's activities.

Human Studies

The Committee's first activity was suggested by Arnold Kauffman of the CDC to more accurately determine the incidence of the disease in the state. A one-year active surveillance study on the island of Hawaii and identification of statistically-significant risk factors for the disease were undertaken. From July 1988 through June 1989, a five-fold increase in incidence was observed as compared with the previous four years of passive surveillance. Annual incidence on the island was estimated to be 128/100,000 population. A new risk factor was also identified, use of household water catchment systems in rural areas. Results of that very important study were published in 1993 by Sasaki, Lorrin Pang, Minette, Chester Wakida,, Wallace Fujimoto, Sally Jo Manea, Robert Kunioka, and Charles Middleton in the *American Journal of Tropical Medicine and Hygiene.*[28]

For her Master of Public Health field work project in 1992, Linda M. Odello compiled a database from DOH records on 404 reported cases diagnosed in the state between 1971 and 1990 and completed a descriptive epidemiologic analysis of the cases.[29] Her report was the basis for subsequent presentations at the 1994 International Leptospirosis Meeting in Italy by Sasaki[30] and by Vernon Ansdell at the 1995 annual meeting of the American Society for Tropical Medicine and Hygiene in San Antonio, Texas.[31]

At the 1997 annual meeting of the American Society of Tropical Medicine and Hygiene, presentations were made by Hawaii researchers as a part of a symposium organized by the DOH and Kaiser Permanente entitled "Leptospirosis: A Re-emerging Disease." Speakers included Ansdell, who presented an overview of the disease and its importance to residents in the tropics;[32] Jeffrey Goodman, who presented "Clinical Leptospirosis in Hawaii: A practitioner's Perspective;"[33] and Sasaki, who presented a "Review of the Epidemiology and Prevention of Leptospirosis in Hawaii: 1992-1996."[34]

In the 1980s and 1990s a number of small common-source outbreaks were reported, in addition to the normal sporadic cases reported to the DOH. In 1986 two sailors swimming in Kalihi Stream in Honolulu were hospitalized with severe leptospirosis. In 1987, circumstances surrounding an outbreak involving eight teen-aged boys who swam daily for two weeks in the Waimea River on Kauai, were published by Alan R. Katz, Manea and Sasaki in the *American Journal of Public Health.*[35] In 1991 investigation of a two case outbreak that occurred among 16 military personnel engaged in repeated recreational swimming at Kapena Falls in Nu'uanu, Oahu, was published by Katz, Sasaki, Alan Mumm, Joel Escamilla, Middleton, and Sophio Romero in *Military Medicine.*[36] In addition to these recreational outbreaks, four outbreaks in agricultural venues were also documented: three ginger farmers in Kea'au, Hawaii, two corn farmers in Kahuku, O'ahu, two pig farmers in Wai'anae, Oahu, and two landscapers in Kapa'a, Kauai.

A retrospective case review also documented multiple infections in residents. From 1977 through 1996, there were records of seven residents with multiple infections. Intervals between infections ranged from one to 10 years. Five of the seven were exposed

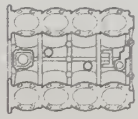
Continued on p. 184



*Based on manufacturer's data. **Based on *Ward's* Upper Luxury Class, comparably equipped models. INFINITI, the INFINITI logo, Accelerating the future, The New Q and INFINITI Model Names are Nissan

TheNewQ.com/340horsepowerV8

A performance-bred, 4.5-liter V8 engine. 0-60 mph in an exhilarating 5.9 seconds.* The most powerful V8 in its class.** The Q45 is quick. By anyone's standard.



It's All Yours, for 48 Hours

At Infiniti Motor Sales in Hawaii, we understand there is no better way for you to experience our vehicles than through a test drive. Not just any test drive. An extended 48-hour test drive*. Take the vehicle of your choice home, drive it to work, even around the island. It's all yours, for 48 hours. For more information about the Infiniti Guest Drive, stop by Infiniti Motor Sales in Hawaii at 2845 Kilihau Street, or call Steve Miyashiro at 836-0848 today.

*** For qualified applicants. Must have valid Hawaii Drivers License. Must show proof of insurance. Other restrictions may apply.**

Accelerating the future

INFINITI

trademarks. ©2001 INFINITI Division of Nissan North America, Inc.

occupationally, including a taro farmer who was diagnosed with leptospirosis three times over a six-year period.

Increased numbers of recreationally-exposed cases in Hawaii over the past 50 years prompted Ansdell and Sasaki,[37] at the 1993 annual meeting of the International Society of Travel Medicine in France, to highlight the risk of exposure for adventurous travelers to the tropics. They recommended medical counseling and prophylactic doxycycline for travelers prior to recreational activities. Considering the diagnosis of leptospirosis in returned febrile travelers, particularly from the tropics and subtropics, has often been neglected because of the broad differential diagnoses (e.g. malaria, dengue fever, typhoid fever, and typhus). In 1999 at the International Leptospirosis Society Meeting in Australia,[38] they summarized six hospitalized cases in returned travelers diagnosed in Hawaii between 1992 and 1998. The study documented the importance of physicians maintaining a high index of suspicion for diseases such as leptospirosis in returned travelers when presenting with nonspecific febrile illnesses.

In 1993, James Gollop, Katz, Raul C. Rudoy, and Sasaki published "Rat bite associated leptospirosis: An uncommon mode of transmission."[39] This article documented the only known reported case of leptospirosis associated with animal bite transmission in Hawaii.

Animal Studies

During this period, there were no known published animal studies. However, in 1987 and 1988, the DOA conducted statewide surveys of domestic cattle and swine, with MAT testing conducted by the U.S. Department of Agriculture. A 64% prevalence was observed in 139 cattle from Kauai, 70% of 168 cattle tested on the island of Hawaii, 35% of 55 cattle tested on Maui, and 86.2% of 29 cattle tested on Oahu.

In 1988, a domestic swine survey showed a 74% prevalence in 222 samples from the island of Hawaii, 75% of 199 animals from Maui, 76% of 63 samples from Molokai, 63% of 79 samples from Oahu, and 45% of 49 samples tested from Kauai. Although commercial vaccines are available for swine and cattle, none of the animals tested had a history of vaccination against leptospirosis.

In addition, small samples of dogs, bison, elk, horses, sheep and mongooses from the four major islands were tested, with prevalence ranging from 50 to 100%. However, many of these animals were suspected of having the disease. The above surveys documented the presence of widespread infections in domestic and feral animals throughout the state.

Diagnostic Test Development

Important environmental diagnostic studies to develop a rapid, inexpensive, accurate test to detect leptospires in water were carried out by Roger L. Fujioka, water microbiologist at the University of Hawaii at Manoa. He presented a study entitled "Recovery and Characterization of Leptospiral Bacteria from Environmental Waters in Hawaii"[40] at the Leptospirosis Research Conference in Japan in 1990, co-authored by Laura Young, and Bunnie Yoneyama. He and Richa Wilson presented a paper on isolation, characterization, and identification of saprophytic and pathogenic *Leptospira* at an International Leptospirosis meeting in Italy in 1994.[41] Further work to detect pathogenic leptospires from water while suppressing saprophytic strains was presented at the 1997 annual meeting of the American Society of Tropical Medicine and Hygiene in Florida.[42]

A need for more sensitive screening diagnostic tests resulted in a 1994 study of a preliminary evaluation of the Quantitative Buffy Coat Analysis system for leptospirosis, by Kenton J. Kramer, Pang, Minette and Joseph Perrone.[43]

The need for screening tests that are easier to use and store resulted in a study titled "International Multicenter Evaluation of the Clinical Utility of a Dipstick Assay for Detection of Leptospira-Specific Immunoglobulin M Antibodies in Human Serum Specimens."[44] It was authored by Henk Smits of the RTI and 19 others, including Sasaki and Harry Y. Domen of the Hawaii DOH. The test was evaluated in Hawai`i. Studies were published in 2000 and 2001 by Smits et. al., including Sasaki, on latex agglutination[45,46] and lateral flow assays[47] that evaluated screening tests that were easy to use and store. Paul Effler, Domen, Sandra Bragg, Tin Aye and Sasaki published "Evaluation of the Indirect Hemagglutination Assay for the Diagnosis of Acute Leptospirosis in Hawaii" in 2000.[48] In spite of the IHA being the only FDA-approved screening diagnostic test for leptospirosis at the time, the test had an overall sensitivity of only 41% of samples tested with the IHA when compared to the confirmatory MAT.

Educational Programs

The DOH and the Ad-Hoc Committee launched many educational initiatives, most of which continue today.

Public Education programs included the following.

1. Brochures were created in three languages: English, Japanese and Ilocano.
2. Red and white warning signs were posted along streams in state and county parks, as well as at exposure sites of previous cases.
3. Leptospirosis education displays were circulated at public libraries and displayed at health fairs, clinics and a hospital.
4. An educational videotape, sponsored by the DOH and Kaiser Permanente, was developed and distributed to all schools and libraries in the state.
5. A sign was created for display in buses on the islands of Oahu and Hawaii.
6. Presentations to enhance understanding the disease and its prevention were made to groups as requested.

The following medical education programs were developed to increase awareness of the epidemiology of the disease in Hawaii.

1. Presentations have been made at national and international scientific meetings.
2. National and international consultations have been conducted.
3. National and international experts have been hosted for seminars and consultation.
4. Grand round presentations have been made at local hospitals and medical organizations.
5. Frequent articles have been published in the DOH's bi-monthly newsletter, Communicable Disease Report, to update physicians on the epidemiology of leptospirosis.
6. Letters are sent to physicians who submit serum samples for diagnostic testing, and include the test result, and a request for convalescent samples for confirmatory testing.

The New Millennium

Studies In Progress

Several studies are being prepared for publication. Clinical and epidemiologic analyses of 25 years of confirmed cases in Hawaii by Katz, Ansdell, Effler, Middleton & Sasaki [49,50]are in press. Ansdell wrote a book chapter reviewing the disease entitled "Leptospirosis" which will be published in the upcoming 3rd edition of *The Travel and Tropical Medicine Manual.*[51] The DOH is analyzing a study evaluating eight rapid screening tests for the diagnosis of leptospirosis in Hawai`i, in which the overall sensitivity by sample of the tests ranged from 27 (IHA) to 53%.

Concerns For The Future

Great progress has been made during the past century in Hawaii in understanding the nature of leptospirosis; its clinical manifestations, the uniqueness of its epidemiology in the state, its laboratory diagnosis, occurrence in travelers, and initiation of community prevention programs. However, further work is needed to more effectively control and prevent this disease.

There are over 600 people a year tested for leptospirosis in Hawaii. The DOH needs to implement a diagnostic laboratory for human and animal disease diagnosis, including MAT testing (confirmatory serologic test) and serotyping of isolates, to more effectively control and prevent this disease. The MAT is the most sensitive diagnostic test, more so than the recently developed polymerase chain reaction test (PCR), but is labor-intensive and requires paired samples drawn two weeks apart. In addition, a more sensitive rapid screening test is needed to assist clinical management of the disease.

It is still not known why the reported incidence in young children is low, and what role different animals play in transmission of the disease. Leptospirosis is an expensive disease, sometimes fatal, and often requiring protracted patient care (over 60% of identified cases are hospitalized). Because of its non-specific clinical presentation, leptospirosis is a disease that is usually recognized only when it is suspected. As a result, vigilance on the part of primary care physicians needs to be maintained. Continuing a high level of awareness in the community is also important to minimize exposures to the disease.

In 2000, a large outbreak of leptospirosis occurred among participants of the Eco-Challenge Adventure race in Borneo.[52] Included among the ill were two residents from Hawaii. The 12-day race included jungle trekking, canoeing, sea paddling, canyoneering, scuba diving, mountain biking, and caving. The race reflects the current popularity of environmentally challenging athletic activities. The outbreak illustrated an important risk for travelers from Hawaii, and emphasized the value of consultation with a competent travel medicine specialist prior to departure.

As concerns about leptospirosis were highlighted in former Governor John Waihee's 1991 State of the State address,[53] health care institutions should lead in programs limiting the impact of this serious disease in Hawaii's residents and tourists.

Author's Note

This paper does not describe all the research conducted in Hawaii, or list all published articles authored by Hawaii residents. In researching this document, over 85 articles were reviewed on leptospirosis related to Hawaii. All but seven references cited refer to work conducted in the state. Our intent is to provide the reader an understanding of the history of leptospirosis research in Hawaii, some of the important people and work that has led to our current understanding of the disease. It is our desire that future researchers may find this helpful in seeking to expand the knowledge of leptospirosis and develop more effective control and prevention measures.

Dedication

This article is dedicated to Henri Minette DrPH (1916-2001) who mentored three generations of leptospirosis researchers in his 56 years with the Department of Health - 30 years as an employee and 26 years as an unpaid volunteer. His profound interest in the subject, technical knowledge, work ethic, keen sense of observation, ability to see the "bigger picture" and receptivity to the ideas of others fostered great progress in our understanding of this disease.

Acknowledgements

Grateful appreciation is extended to the following for their review of the manuscript and helpful suggestions: Philip P. Bruno DO, FACP, Chief, Communicable Disease Division, DOH; O.A. Bushnell PhD, Emeritus Professor of Microbiology, University of Hawaii, and Hawaiian historian; Vernon Miyamoto PhD, Chief, State Laboratories Division, DOH; and Robert M. Worth MD, PhD, Emeritus Professor of Epidemiology, University of Hawaii School of Public Health, and retired Chief, Communicable Disease Division, Hawaii Department of Health.

Authors

*Charles R. Middleton MS
Retired, Research Corporation of the University of Hawaii
**Vernon E. Ansdell MD, FRCP, DTM&H
Kaiser Permanente, Hawaii
***David M. Sasaki DVM, MPH
Hawaii Department of Health, Communicable Disease Division

References

1. Castiglioni A. The Golden Age of Greek Medicine. Hippocratic Medicine – A Biologic and Synthetic Concept. In: Krumbhaar EB. ed. *A History of Medicine*, 2nd ed. New York N.Y. Alfred A Knopf, Inc; 1947:169.
2. Faine S, Adler B, Bolin C, Perolat P. *Leptospira and Leptospirosis*, 2nd Ed. Melbourne, Australia: MediSci; 1999:1.
3. Larrey DJ. Memoires de chirugie militaire, et capagnes. *J. Smith.* 1812, 2:18-32
4. Weil A. Uber eine eignethumlich, mit Mitzumor Icterus un Meijrotos comergejemde acta omfectoprimairamlaeit. *Deut. Arch. Klin. Med.* 1886, 9:209-232.
5. Inada R, Ido Y, Hoki R, Kaneko R, Ito H. The etiology, mode of infection and specific therapy of Weil's Disease. *J. Exp. Med.* 1916, 23:377.
6. Noguchi H. Morphological characteristics and nomenclature of *Leptospira (spirochaeta) Icterohemorrhagiae* (Inado and Ido). *J. Exp. Med. 1918*, 27:575.
7. Alicata JE. A Study of Trichinosis and Infectious Jaundice in the Hawaiian Islands. Trans. of the 47th Annual Meeting of the Hawai'i Territorial Medical Association. 1937, 95-103.
8. Enright JR, Fennel EA. Weil's Disease in Hawai'i, *Proc. of the Sixth Pacific Science Congress.* 1939, 5:337-343.
9. Alacata JE, Breaks V. A Survey of Leptospirosis in Honolulu. *Hawai'i Med. J.* 1943, 1:137-142.
10. Alicata JE. A Study of Leptospirosis in Hawai'i. *Plantation Health.* 1944, 8(4):1-33.
11. Alicata JE, Breaks, V. Incidence of Leptospirosis among dogs in Honolulu as determined by serological agglutination tests. *J. Wash. Acad. Sci.* 1942, 32:305-308.
12. Alicata JE. Active Immunization of Dogs against Leptospirosis by the use of formalized leptospira antigen. *JAVMA.* 1943, CII(795):472-473.
13. Alicata JE. The Diagnosis of Leptospirosis. *Plantation Health.* 1942, 6(3):1-8.
14. Anderson BS, Minette HP. Leptospirosis in Hawai'i: Shifting trends in exposure, 1907-1984. *Int. J. Zoon.* 1986, 13:76-88.
15. Anderson BS, Brock JA, Higa HH, Gooch JM, Wiebenga NH, Palumbo NE et. al. A Study of the Epidemiology of Leptospirosis on Aquaculture Farms in Hawai'i. State of Hawai'i Department of Health. 1982, 153 pp.

16. Anderson BS, Higa HH, Brock JA, Serdula MK, Gooch JM, Weibenga NH et. al. A Study of the Epidemiology of Leptospirosis on Taro Farms in Hawai'i. State of Hawai'i Department of Health. 1982, 69 pp.
17. Patterson HM. Weil's Disease: A Report of Thirty-seven Cases. *Hawai'i. Med. J.* 1944, 3:213-221.
18. Patterson HM. Weil's Disease: Observations on sixty one cases with special reference to the use of Penicillin in six cases. *JAMA.* 1947, 134:1077-1080.
19. Shrader WA Jr. Leptospirosis in Hawaii. *Hawai'i Med J.* 1977, 36:135-138.
20. Sasaki DM. Leptospirosis Surveillance in the United States and Hawaii: 1979-1983. University of Hawaii School of Public Health. 1984, unpublished observations, 1-22.
21. Alicata JE. Studies on swine leptospirosis. Univesity of Hawai'i, Ag. Exp. Sta. Biennial Report:1944-1946. 1947:100
22. Minette HP. Leptospirosis in rodents and mongooses on the island of Hawai'i. *Am. J. Trop. Med. & Hyg.* 1964, 13:826-832.
23. Shimizu M. Environmental and biological determinants for the prevalence of leptospirosis among wild small mammal hosts, island of Hawai'i. *Int. J. Zoon.* 1984, 11:173-188.
24. Zahn A. A Survey to determine the presence of leptospirosis in rodents and mongooses on the island of Maui, Hawai'i . University of Hawai'i School of Public Health. 1968, Unpublished observations, 1-25.
25. Yan P. Leptospirosis on Oahu. University of Hawai'i School of Public Health. 1970, Unpublished observations, 1-18.
26. Beck GF. A survey of the mammalian fauna in the Waimanu Valley, island of Hawai'i. for the prevalence of leptospirosis. University of Hawai'i School of Public Health. 1977, Unpublished observations, 1-33.
27. Minette HP. A Modified Technique for reading the rapid slide agglutination test for leptospirosis. *Science.* 1945, 101(2619) 256.
28. Sasaki DM, Pang L, Minette HP, Wakida CK, Fujimoto WJ, Manea SJ et. al. Active Surveillance and Risk Factors for Leptospirosis in Hawai'i. *Am. J. Trop. Med. Hyg.* 1993, 48(1):35-43.
29. Odello LM. Epidemiology of Leptospirosis in Hawai'ii : Analysis of 382 cases, 1971-1990. University of Hawai'i School of Public Health. 1992, Unpublished observations, 1-42.
30. Sasaki DM, Ansdell VE, Odello LM, and Katz,AR. Surveillance of Leptospirosis in Hawaii 1971 -1990 and Changing Epidemiological Trends. VIIIth Meeting of European *Leptospira* Workers. Anzio, Italy. 1994.
31. Katz AR, Sasaki DM, Odello LM, Ansdell VE. Leptospirosis in Hawai'i:1970-1990. Clinical and Epidemiological analysis of 189 laboratory confirmed cases. Annual Meeting of the American Society of Tropical Medicine, San Antonio, Tex, 1995.
32. Ansdell VE. Overview of *Leptospira* and the Epidemiology of Leptospirosis. Annual Meeting of the American Society of Tropical Medicine and Hygiene. Orlando, Fla, 1997.
33. Goodman J. Clinical Leptospirosis in Hawaii: A Practitioner's perspective. Annual Meeting of the American Society of Tropical Medicine and Hygiene. Orlando, Fla, 1997.
34. Sasaki DM. Surveillance, Prevention and the Epidemiology of Leptospirosis in Hawai'i: 1992-1996. Annual Meeting of the American Society of Tropical Medicine and Hygiene. Orlando, Fla, 1997.
35. Katz AR, Manea SJ, Sasaki DM. Leptospirosis on Kauai: Investigation of a Common Source Waterborne Outbreak. *Am. J. Pub. Hlth.* 1991, 81(10):1310-1312.
36. Katz AR, Sasaki DM, Mumm AH, Escamilla J, Middleton CR, Romero SE. Leptospirosis on Oahu: an outbreak among military personnel associated with recreational exposure. *Military Medicine.* 1997, 162(2):101-104.
37. Ansdell V, Sasaki DM. Leptospirosis in Hawaii: Important Implications for the Adventurous Traveler in the Tropics. Third Conference on International Travel Medicine. International Society of Travel Medicine, Paris, France. 1993.
38. Ansdell V, Sasaki DM. Leptospirosis in travelers: An under-recognized hazard. International Leptospirosis Society, 2nd Mtg. 1999, Marysville, Australia.
39. Gollop JH, Katz AR, Rudoy RC, and Sasaki DM. Rat bite associated leptospirosis: An uncommon mode of transmission. *West J. Med.* 1993, 159:76-77.
40. Fujioka R, Young L, Yoneyama B. Recovery and Characterization of Leptospiral Bacteria from Environmental Waters in Hawai'i. In Kobayashi Y, ed. *Leptospirosis: Proc. of the Leptospirosis Research Conference 1990.* Matsuyama, Japan: Hokusensha; 1991:419-430.
41. Wilson RB, Fujioka RS. Isolation, characterization and identification of saprophytic and pathogenic *Leptospira* isolated from environmental waters in Hawai'i. VIIIth Meeting of European *Leptospira* Workers. Anzio, Italy, 1994.
42. Fujioka RS. Methods of Recovery of Pathogenic *Leptospira* from Environmental Waters to Assess Human Health Risks. Annual Meeting of the American Society of Tropical Medicine and Hygiene. Orlando, Fla, 1997.
43. Kramer KJ. Pang LW, Minette HP, and Perrone JB. Evaluation of the Quantitative Buffy Coat Analysis (OBC) System for the Detection of *Leptospira* in Human Blood. *SE Asian J. Trop. Med. & Pub.Hlth.* 1994, 25(4):788-9.
44. Smits HL, Ananyina YV, Chereshsky A, Dancel L, Lai-a-fat RFM, Chee HD et.al. International Multicenter Evaluation of the Clinical Utiltiy of a Dipstick Assay for Detection of *Leptospira*-Specific Immunoglobulin M Antibodies in Human Serum Specimens. *J. Clin. Microbiol.* 1999, 37(9):2904-2909.
45. Smits HL, van der Hoorn MAWG, Goris MGA, Gussenhoven GC, Yersin C, Sasaki DM, et. al. A Simple latex agglutination assay for the quick serodiagnosis of human leptospirosis. *J. Clin. Microbiol.* 2000, 38(3):1272-1275.
46. Smits HL, Chee HD, Eapen CK, Kuriakose M, Sugathan S, Gasem MH et. al. Latex Based, Rapid and Easy Assay for Human Leptospirosis in a Single Test Format. *Trop Med & Int Health.* 2000, 6(2):114-118.
47. Smits HL, Vestering M, Abdoel TH, Gussenhoven GC, Yersin C, Sasaki, DM. et.al. Lateral Flow Assay for the Rapid Diagnosis of Human Leptospirosis. *Clin. Diagn. Lab. Immunol.* 2001,8(1):166-169.
48. Effler PV, Domen HY, Bragg SL, Aye T, Sasaki DM. Evaluation of the Indirect Hemagglutination Assay for the Diagnosis of Acute Leptospirosis in Hawaii. *J. Clin. Microbiol.* 2000, 38(3):1081-1084.
49. Katz AR, Ansdell VE, Effler PV, Middleton CR, Sasaki DM. Assessment of the clinical presentation and treatment of 353 laboratory confirmed leptospirosis cases in Hawaii, 1974-1998. *Clin Inf Dis.* 2001, in press.
50. Katz, AR, Ansdell VE, Effler PV, Middleton CR, Sasaki DM. Leptospirosis in Hawaii, 1974-1998: epidemiologic analysis of 353 laboratory confirmed cases. *Am J Trop Med Hyg.* 2001, in press.
51. Ansdell VE. Leptospirosis. In Jong EC, McMullen R. eds. *The Travel and Tropical Medicine Manual, 3rd Ed.* Philadelphia, PA: W.B. Saunders Co., Inc; In press.
52. Centers for Disease Control and Prevention. Public Health Dispatch: Outbreak of Acute Febrile Illness among Participants in EcoChallenge Sabah 2000 Mayalsia, 2000. *Morbid. Mortal. Weekly Rep.* 2000, 49(36):816-817.
53. Waihee J. 1991 State of the State Address. Honolulu Star Bulletin. January 20, 1991.

Schering/Key Pharmaceutical

Claritin-D® 12 Hour
(5 mg loratadine/120 mg pseudoephedrine sulfate, USP)
Extended Release Tablets

Claritin-D® 24 Hour
(10 mg loratadine/240 mg pseudoephedrine sulfate, USP)
Extended Release Tablets

Claritin® RediTabs®
10 mg (loratadine rapidly-disintegrating tablets)

Claritin® Syrup
(loratadine) 10 mg per 10 mL

Once-a-day nasonex (mometasone furoate monohydrate) Nasal Spray, 50 mcg

Claritin® 10 mg TABLETS (loratadine)

Tequin® gatifloxacin

Velvet Agena-Chee
Senior Sales Representative
Voice Mail (800) 782-2347
Box 3858

Donn keoki Arizumi
Pharmaceutical Representative
Voice Mail (800) 544-5420
Box 8058

Shawn Brady
Sales Representative
Telephone (808) 387-1409
Voice Mail (800) 554-5420
Box 1342
FAX (808) 373-1772
E-Mail shawn.brady@spcorp.com

Mark Buquoi
Sales Representative
Telephone (808) 384-3862
Voice Mail (800) 544-5420
Box 9795
FAX (808) 841-6105

Dennis M. Hamamura
Senior Pharmaceutical Rep.
Telephone (808) 671-0225
Voice Mail (800) 544-5420
Box 8774
FAX (808) 671-0817

Carol K. Honda
Sales Representative
Voice Mail (800) 554-5420
Box 8322
FAX (808) 593-1776

Rachelle Hyde
Sales Representative
District Trainer
Voice Mail (800) 782-2347
Box 3861

Caroline Perry
Sales Representative
Voice Mail (800) 554-5420
Box 1274
E-Mail Caroline.perry@spcorp.com

Brian Souza
District Account Representative
Telephone (808) 394-9475
Voice Mail (800) 554-5420
Box 6811
FAX (808) 394-9475
E-Mail brian.souza@spcorp.com

Medical School Hotline

Teaching Cultural Competency

Patrice M.L. Tim Sing, M.D.
and
Martina L. Kamaka, M.D.
Fellows, Medical Education Fellowship
John A. Burns School of Medicine

Currently, "minorities" represent greater than one third of the total population in the United States. [1] Significant health disparities exist for many of these minority populations.[2] To meet effectively their healthcare needs, medical practitioners need to be culturally competent.

Cultural competence has been defined as "a set of academic and interpersonal skills that allow individuals to increase their understanding and appreciation of cultural differences and similarities within, among, and between groups." [3] Without such competence, breakdown in communication can occur, with adverse effects on the patients' health. For example, compliance can be compromised if the physician's recommendation is in contrast to what the patient believes, or has been taught to believe. The physician-patient communication is a crucial component of cultural competency training.

Training in this area is gaining popularity and representation in medical curricula. The Association of American Medical Colleges (AAMC) has adopted terminology recommending that cultural, or multicultural issues, be included in the medical school curricula. In addition, the American College of General Medical Education (ACGME) has recommended cultural competency as a training priority for primary care residencies. Programs concentrate on teaching skills and knowledge, while trying to influence attitudes, regarding the cultural assessment of the patient.

Training toward cultural competency begin with teaching skills in effective communication that allows the physician to elicit and acknowledge an understanding of the patient's "clinical reality" that includes cultural beliefs or experiences. The inability to address this "clinical reality" creates barriers to understanding the patient's perspective. Physicians need to be aware of the patient's perspective as well as their own prejudices and beliefs. Both factors affect the physician interaction with the patient. Effective, compassionate health care dictates that the two parties understand and communicate with each other.

Opportunities exist to implement cultural competency in Hawaii's unique, multicultural environment. The University of Hawaii, John A. Burns School of Medicine (JABSOM) is in an ideal position to fulfill it's mission "to be the best medical school...with an Asian-Pacific focus" by creating culturally competent medical curricula that address the multicultural demographics of Hawaii.

Cultural Competency training is currently underway at the JABSOM that focus on Native Hawaiians. Native Hawaiians are indigenous people of the islands who make up twenty percent of the population. It is important to target Native Hawaiians because of the significant health disparity that exists between Native Hawaiians and other ethnic populations of Hawaii. For example, Native Hawaiians have the highest morbidity and/or mortality with respect to cardiovascular disease, diabetes and breast cancer.[5] Reasons for this disparity are many such as barriers to access that include physical barriers such as community location or transportation as well as cultural ones. Training physicians that can respond to hidden cultural and value-laden beliefs that may be obstacles to achieve health should be a goal of any curriculum. By making Hawaii's physicians more culturally sensitive to behavior and attitude, Native Hawaiians may renew their interest and trust in the medical community. Hopefully, this will lead to lower morbidity, mortality and cost of care to this population.

The Native Hawaiian who may not feel a connection to the physician and the health care system may discontinue or even initiate allopathic care. Kleinman[4], a medical anthropologist, has discussed the disparities between popular (public, alternative, complementary) medicine and the medical community. He proposes that the lay public seeks other, more easily accessible realms of healthcare because it's what they know, and it, in a sense knows them, albeit having a congruity of two clinical realities. Understanding the alternative and /or traditional healing systems that a patient seeks is essential in providing health care. Physicians need to be aware of the roles these alternative treatments play on their patients' health and on western medicine based treatments. Medical student's knowledge about traditional and/or alternative healing systems should be included in any cultural competency curriculum.

The Native Hawaiian Center of Excellence (NHCOE) at JABSOM is addressing cultural competency training in two ways. First, informing medical school faculty and community physicians about the disparate health of Native Hawaiians through a series of workshops. Second sponsoring a Native Hawaiian cultural immersion based CME program. The first workshop was conducted on the island of Kaho'olawe, a culturally significant place to Native Hawaiians. The curriculum focused on activities that would help physicians to increase their knowledge of their own culture and to recognize how their cultural constructs affect the physician-patient relationship.

Activities included lectures and hikes to archeological and culturally significant sites, instruction in cultural protocols, sessions for family and spiritual sharing, prayer, chanting, music, hula, ecological restoration work. The formal CME program introduced the physicians to Native Hawaiian healing practices including *Lomilomi* (massage), *La'au Lapa'au* (herbal medicine), *Ho'oponopono* (traditional conflict resolution) and traditional diet. Lectures addressed cultural competency from a global perspective and affects of culture on the physician-patient relationship. There was time for discussion and sharing of ideas. Native Hawaiian physicians were targeted initially but the NHCOE plans to include other physicians and medical students.

An alternative approach is JABSOM's post-baccalaureate program, Imi Ho'ola, that provides a year of enrichment prior to medical school matriculation for minorities from disadvantaged backgrounds. The student demographics range from Native Hawaiian, Filipino, Pacific Islanders and other ethnic groups. There is evidence that medical students from minority backgrounds fare better in bringing cultural competency skills. [6] A needs assessment of students and faculty at Imi Ho'ola illustrated that there was

significant interest in learning and teaching cultural competency skills to further effective patient-doctor communication; and, in turn, improve patient outcome.

The curriculum is designed to improve the student's appreciation for the cultural impact on patient's view of illness and healthcare with the use of paper cases and a standardized patient experience. The Native Hawaiian culture is used as an example to address general issues of cultural competency. It is anticipated that students would have cultivated attitudes, knowledge base and skills in the doctor-patient interaction, regardless of what culture they would face in practice.

In conclusion, cultural competency training in medical education is recognized as essential. This competency is a development that occurs over a continuum. JABSOM is uniquely situated in a multicultural setting that provides the medical school the opportunity and motivation to be a leader in innovative cultural competency curricula. Several examples illustrate how this can be addressed in the Native Hawaiian population. Whether these strategies will prove to be successful in the long run, and be useful for other ethnic groups remains to be seen. It is conceivable that, with such a diverse population that exists in these islands, equally diverse approaches to cultural competency training may be needed. Continued evaluation and improvement of the curriculum will result in students who will be able to use general principles for patients of other cultures and modify the approach for specific encounters. Cultural competence would then be assured regardless of the patient's diversity.

References

1. www.census.gov/statab/www/partl.
2. U.S Department of Health and Human Services, Public Health Service (1990). Healthy people 2000. Publication No. (PHS) 91-50213. Washington, DC: DHHS.
3. Cultural Competence for Evaluators: A Guide for Alcohol and Other Drug Abuse Prevention Practitioners Working with Ethnic/Racial Communities. Rockville, Maryland: US Department of Health and Human Services, 1992
4. Kleinman AM. Culture, Illness, and Care. Annals of Internal Medicine 88, 251-8, 1978.
5. Look, MA and Braun, KL. A Mortality Study of the Hawaiian People 1910-1990. Honolulu, HI: The Queen's Health Systems, 1995.
6. Robins, LS, et al. Assessing medical student's awareness of and sensitivity to diverse health beliefs using a standardized patient station. Acad Med 2001; 76(1): 76-80.



If you don't think anyone would hire you to manage their investments, why are you managing your own?

Investment Consulting Services

If you are an individual investor or the administrator of a trust or employee benefit plan with assets of $100,000 or more, Morgan Stanley Dean Witter believes you deserve special attention.

Through our Investment Consulting Services department, you have access to the professional knowledge and experience of independent investment managers, affording you the same benefits that large institutional investors have enjoyed for many years.

To learn more about the consulting services we offer, please call:

Gwen Pacarro, CIMA
Sr. Vice President, Financial Advisor

Gary Pacarro
Financial Advisor

Pacific Tower, Suite 1600
1001 Bishop Street
Honolulu, HI 96813
(808) 525-6048

MORGAN STANLEY DEAN WITTER

Morgan Stanley Dean Witter is a service mark of Morgan Stanley Dean Witter & Co. and services are offered through Dean Witter Reynolds Inc., member SIPC. © 2000 Dean Witter Reynolds Inc.

Cancer Research Center Hotline

Quality of Life Research in Hawaii's Cancer Survivors

Carolyn Cook Gotay, PhD
Cancer Research Center of Hawaii
University of Hawaii

This research has been supported by grants from the National Cancer Institute (N01-CN-67001, R01-CA-61711) and the National Institute on Aging (RO1-AG16601).

More effective treatments and approaches to early detection have contributed to a dramatic rise in the proportions of cancer survivors over the past few decades. In 1930, only one in five cancer patients lived five or more years after diagnosis; by 1997, approximately one in two patients were survivors.[1] Over 80% of patients with Hodgkin's disease or with cancers of the breast, uterus, prostate, testis, or thyroid can expect to live at least five years after their diagnosis.

A diagnosis of cancer, as well as cancer treatment, have a significant impact on patients' daily functioning. Patients must live with physical sequelae, including short-term side effects and permanent changes due to powerful and toxic treatments. In addition, the experience of being diagnosed and treated for a potentially fatal disease may negatively affect psychological status, disrupt family and employment activities, and prompt examination of personal spiritual beliefs. "Quality of life" (QOL) is a term that is used to refer to these multifaceted outcomes experienced by a patient. While definitions of QOL vary, virtually all investigators agree that QOL in cancer patients encompasses multiple domains, or areas, of well-being including, at a minimum, physical, psychological, and social functioning.[2]

Little research has investigated how cancer-related quality of life (QOL) varies according to culture, especially in non-Western groups. Hawai'i provides a rich natural laboratory for studying this topic, due to its cultural diversity. Hawaii's residents draw upon European, Asian, and Polynesian heritages, as well as others, reflecting dramatic variations in traditional values, customs, attitudes and behaviors in almost every area of life. We are conducting research funded by the US National Institutes of Health to understand more about how ethnic and cultural variables affect QOL in cancer survivors.

One National Cancer Institute-funded study assessed quality of life (QOL) in recently diagnosed breast (N=126) and prostate (N=101) cancer patients of European American and Asian Pacific Islanders (specifically, individuals of Filipino, Japanese, and Native Hawaiian ancestry) to investigate whether QOL varied according to ethnicity. Participants were identified through consecutive registrations on the Hawai Tumor Registry (HTR), based on a diagnosis of breast or prostate cancer 4 to 6 months previously. QOL was measured by a standardized questionnaire widely-used in cancer patient populations. We found that QOL was similar across ethnic groups in most areas. However, differences were found in several domains, all in the direction of Filipino breast cancer patients reporting worse outcomes, even when clinical and demographic predictors are controlled.[3]

Another study, supported by the National Institute on Aging, investigates quality of life in long-term prostate cancer survivors and their spouses (N=181). Participants were identified through the HTR, based on prostate cancer diagnosis five (n=86), eight (n=76), or 11 (n=19) years ago. Survivors received no therapy ("watchful waiting") (n=17), surgery (n=84), or radiation (n=80). Data were collected through mailed questionnaires including standard measures. On average, the survivors were 77 years old and spouses 72 years old, and 75% were of Asian/Pacific Islander (API) descent. Overall, survivors and spouses were doing well, with mean scores of 5.6 or higher on a 7-point global QOL scale for all groups, and 14% reporting depression levels above standardized cutoffs. Survivors who received radiation therapy had significantly impaired physical and bowel function and role limitations due to decreased physical health and emotional problems, compared to surgery patients. Group differences were maintained for physical and bowel function using analyses of covariance (ANCOVA) with age as the covariate. Men who received surgery reported significantly more sexual problems than survivors who received watchful waiting or radiation. These differences persisted when patient age was included in an ANCOVA. The groups did not differ in satisfaction with urinary function. Treatment satisfaction ratings showed that wives in surgical and radiation groups were more pleased with their husbands' treatment than the survivors were. Survivors who received watchful waiting and their wives were significantly more likely to report that they would choose the same treatment again, compared to surgery-treated survivors and their wives.[4]

A National Cancer Institute-supported study compared quality of life in long-term survivors of cancers of the breast (N=239) and prostate (N=87). Cancer survivors were identified through the HTR. Eligibility criteria included: localized disease at diagnosis, no evidence of disease at most recent registry follow-up, ability to respond to written English language questionnaire, 18-30 months post-diagnosis ("short-term survivors") or 60-72 months post-diagnosis ("long-term survivors"); Filipino, Hawaiian, Japanese or Caucasian ancestry. Participants completed mailed questionnaires including standardized measures of QOL and free-response questions. Results indicated a number of differences between survivors of the two diseases: prostate survivors were more likely to report sexual problems (more than 50% in both survivors groups, compared to less than 8% of breast cancer survivors) and lower levels of emotion (both positive and negative). All groups reported making a number of lifestyle changes following their diagnosis, including stress control, spending more time with family and friends, dietary modifications, and changing priorities. Survivors of Filipino ancestry reported higher levels of stress and depression: 30% of Filipinos were rated as depressed at both time periods. Problems reported by survivors tend to persist over time (e.g., at two and five years post-diagnosis), even though most respondents across ethnic groups function well compared to population norms.[5]

Our research to date indicates that cancer survivors experience numerous changes as a result of having been diagnosed and treated for cancer. Cancer treatment related morbidities may persist even many years after treatment cessation. QOL concerns appear to differ

Continued on p. 193

News and Notes Henry N. Yokoyama MD

POTPOURRI...

The ten-year old boy was failing math...His parents tried everything to get him to do well in school, but nothing worked. Finally they enrolled him in a Catholic school...From the first day, the boy spent every night pouring over his books. The first report card came with an A in math.

"Son," the father asked. "What made the difference in math class? The nuns? The text books?"

"Dad, I had never taken math seriously before," the boy admitted..."But when I walked in and saw the guy nailed to the plus sign, I knew the place meant business."

John Stean

— — — — — — — —

An enormously wealthy 65-year old man fell in love with a young woman in her 20's and was contemplating a proposal...He asked his friend: "Do you think she would marry me if I tell her I'm 45?" "Your chances are better," said the friend, "if you tell her you're 90."

— — — — — — — —

Phoning a patient, the doctor says "I have some bad news and some worse news..."

"The bad news is that you have 24-hours left to live."

"That is bad news," the patient replies..."What could be worse?"

The doctor answers: "I've been trying to reach you since yesterday."

Prosenta Chakroberts

— — — — — — — —

TRUE CONFESSIONS...

A colleague related the following incident that occurred when he was an intern in the E.R...

A young teenage female was admitted to the department complaining of abdominal pain. The attending after the usual barrage of questions, asked her is she was sexually active...

Sheeplishly she looked up and replied, "No, I just lie there."

Dr. Howard Shifferon

— — — — — — — —

POTPOURRI...

A Poor Fit: During a routine afternoon, a young girl entered my office with an older woman who turned out to be her sister...

The girl seemed embarrassed when I asked her what the problem was...

"I need an operation," she murmured...

"What sort of operation?" I asked...

"You know, down there, my boyfriend says I'm too loose...and I need an operation to make it tighter."

I proceeded to examine her "down there". Everything seemed to be in order and I reassured her that she was perfectly normal and didn't need an operation...

She was unconvinced and insisted this was a serious matter and she was afraid of losing her boyfriend...I was getting annoyed by the boyfriend's attitude so I told her "perhaps he was too small."

Her sister jumped up and said, "That's what I told her." With that they both left with the patient still looking unconvinced.

Dr. T. A. Rohland

— — — — — — — —

I Ain't Dead Yet...

When I was a first year medical student, our clinical group was being instructed on examination skills at the Family Medicine Center...One Monday morning, we had a didactic session on cardiac murmurs...Then we were turned loose on a patient who was supposed to have some cardiac findings.

The patient turned out to be a 70-year old widow...

She looked at me and asked, "What are you checking for, young fellar?"

"I'm feeling you for a thrill."

She gave me an understanding look, took her blouse completely off, pulled up her bra and said, "You go ahead and enjoy yourself, young fellar, I ain't dead yet myself."

Dr. F.R.S.

— — — — — — — —

Novel Treatment...

A long time ago when I was an intern at a Toronto teaching hospital, a patient came to the ER with a fish bone stuck in her throat. The ENT staff physician on call was contacted and the intern was told to take the patient to the ENT surgery...

A corridor with a gentle sloping ramp led to another part of the hospital where the ENT Operating Room was located...At the top of the ramp, the intern lost control of the wheelchair which hurled down the ramp. At the bottom of the ramp, the wheelchair was caught on the doorway and the patient thrown to the ground and coughed up the fish bone. The intern with great presence of mind said, "You're awfully lucky, Lady...Usually we have to do this two or three times before we get it out."

Dr. James Watt

— — — — — — — —

POTPOURRI...

Steve and Dave were laid off...so they went to the unemployment office...When asked his occupation, Steve relied, "I'm an underwear stitcher. I sew the elastic onto cotton panties." The clerk looked up underwear stitcher and found it classified as unskilled labor. Steve would receive $300 a week in unemployment benefits...

When Dave was asked his occupation, he said "Diesel Fitter." Since diesel fitter was skilled work, Dave would get $600 per week. Steve stormed back to the office to complain. The clerk explained that Steve was an unskilled laborer and Dave was a skilled worker.

"Skilled?" said Steve outraged. "What skill?" "I sew the elastic on the panties. Then, he holds them up and says, "Yup, diesel fitter."

— — — — — — — —

Unexplained Weight Loss?

I was one of two physicians in a small community. Maternity patients would see both of us for check-up during their pregnancy... One evening a somewhat hefty woman came for a prenatal visit, or so I thought...I noted on the chart that she was just about her due date...I checked her BP, urine, and weight...

She had lost 20 lbs. since her last visit. I rechecked the weight and still a 20 lb. discrepancy...

"According to the scale, you've lost 20 lbs." I commented...

"Yes...I had the baby last week."

Dr. Kenneth Murray

— — — — — — — —

Overheard...

Two men discussing a friend's ailments... "I heard Joe's laid up in bed with back pain. The doctor told him it's "PSYCHOTIC NERVE"..."Yeah, I heard the pain gets so bad it can drive you crazy."

— — — — — — — —

Sleeping Aid...

At the end of a long and arduous afternoon clinic just after Christmas, my day was certainly spruced up by one of my regulars, a witty middle aged lady...

She was consulting me about a painful left foot which had apparently kept her awake all night all through Christmas...Besides diagnosing and pre-

scribing some medication for her malady, I asked whether she needed "something to sleep with."

She replied, "No thanks, I got John."

Dr. Peter Groenward

— — — — — — — —

What A Relief!

Mary, a 400-lb. patient with massive lymphedema of both legs is barely able to get around and sits all day in a double wide Laz-E-chair...

On a recent visit to her home to remove some stitches from her leg, I pulled up a chair and was concentrating on the stitches when I noticed I was sitting on something cool and damp...

"Did you spill some water on this chair, Mary?" I asked?

"Oh no, Doctor, don't worry about that." "I was just sitting there an hour ago and had lost control of my bladder before Brian could get me on a commode."

Dr. Bernhard

— — — — — — — —

Life's Like That...

After I warned the nurse taking blood that it would be very hard to find a vein on me, she said, "Don't worry, we've seen worse...Last year, we had a girl come in for a blood test for her marriage license and we had to stick her six times in four places before we got anything."

"Yes, I know...That was me!"

— — — — — — — —

MEDICAL TID BITS...

Joint Saver?

Dr. John Lippel, Medical Director of the Arthritis Foundation says that new research should have an extraordinary impact on the treatment of osteoarthritis (which afflicts one in three Americans over age 63). A recent long term study showed that a regular glucosamine sulfate regimen can ease the pain and disability of osteoarthritis...The subjects were given 1,500 mgm of glucosamine sulfate daily over three years and reported a 20-25% improvement in symptoms and little or no changes in the X-rays of the joint spaces...

— — — — — — — —

Ritalin:

Millions of children with ADHD take Ritalin...A Duke University study suggests that the drug is both over and under prescribed...25% of kids with confirmable ADHD are not getting the drug while more than one-half the kids who take the drug should not be...

— — — — — — — —

RU-486:

Two years after the debut of RU-486 (Mineprestone) in France as the "abortion pill" the FDA has approved its use. The pills alone cost $240 and are not as cost effective as surgical abortion...

— — — — — — — —

Stem Cells:

Medical researchers dream of using stem cells to treat a whole range of untreatable diseases, but are restricted by religious opposition and fears that the embryos (the best source of stem cells) could become a kind of cash crop.

— — — — — — — —

Xena:

Xena is a female piglet cloned from fetal pigskin cells. The techniques that make Xena may eventually create a supply of genetically modified pig liver that would be acceptable to the human immune system.

— — — — — — — —

Zinc:

A study from the Annals of Internal Medicine suggests that folks who take Zinc supplements to ward off colds may be reducing the cold symptoms by four days... (Zinc however lowers HDL).

— — — — — — — —

Testosterone:

Four million men in the U.S. with clinically low testosterone levels take supplements...A new topical formulation ANDRO GEL will make it easier for legitimate users to take the hormone...

— — — — — — — —

Verteporfin:

AMD (Age Related Macular Degeneration) afflicts 13 million Americans and cause vision loss...Verteporfin is the first treatment approved for AMD...It is a photosensitive dye, which is activated by low intensity laser, destroys the troublesome vessels...

— — — — — — — —

Fast Pack:

FDA has approved FAST Pack (an automated blood analyzer) which measures the level of Prostate Specific Antigen (PSA) within 15 minutes...

— — — — — — — —

Gene Therapy:

Progress in several medical centers are on hold since the 1999 death of Jesse Gelsinge, 18, the first American known to have died from gene therapy...Doctors in France have successfully used gene therapy to treat infants with congenital immune disorder.

— — — — — — — —

Tenectaplase:

A powerful new clot busting drug, TENECTAPLASE, has reduced treatment time for heart attack patients from 90 minutes to just 5 seconds... Clinical trials show the drug to be as effective as TPA and easier to use (i.e., a single injection instead of an hour and a half infusion). It is also longer acting...and targets blood clots...

— — — — — — — —

Lung Cancer:

Researchers have found that a diet rich in fruits and veggies reduces the risk of lung cancer in women (the scientists suspect carotenoids may be the anti-carcinoid).



People know Pueblo for its...



Snazzy Web Site?
(www.pueblo.gsa.gov)



Cool Consumer
Information Catalog?



Easy-To-Remember
Phone Number?
(1-888-8 PUEBLO)



Famous Hot Salsa?

It's not just the salsa. In Pueblo, the free information is also hot. You can get it by dipping into the Consumer Information Center web site, www.pueblo.gsa.gov. Or calling toll-free 1-888-8 PUEBLO (1-888-878-3256) to order the free Catalog. Either way, you can spice up your life with ready-to-use government information on topics like investing for retirement, getting federal benefits, raising healthy children and buying surplus government property.

So remember, if you want information, mild, chunky or otherwise, Pueblo is all you need to know. Sorry, salsa not available through the Consumer Information Catalog or web site.

A public service of this publication and the Consumer Information Center of the U.S. General Services Administration.

"Cancer Research Center Hotline," continued from p. 189

in survivors of different cancer sites and ethnicities. Many survivors report positive effects of having experienced cancer, such as increased appreciation of life and changed priorities, as well as problems.

We are developing additional research to understand more about factors that predict high and low QOL. We are also exploring QOL in specified populations including survivors of more than one primary cancer, long-term cervical cancer survivors, individuals who have survived poor prognosis cancers, newly-diagnosed breast cancers, and men with breast cancer. We are initiating research projects to identify the most effective ways to provide support and assistance to cancer survivors, especially for Filipinos, who appear to be at particular risk of psychological distress. These interventions include telephone counseling delivered by lay advocates, a program to help survivors express their feelings in writing, and therapeutic massage. Our ultimate goal is to enhance well-being in cancer patients and their families by providing culturally-appropriate interventions that will assist them in achieving the highest possible QOL.

References

1. American Cancer Society. (2001). *Cancer Facts & Figures 2001.* Atlanta, GA: American Cancer Society.
2. Gotay, CC, Muraoka, M. (1998). Quality of life in long-term survivors of cancer. *J Natl Cancer Institute 90,* 656-67.
3. Gotay, CC, Holup, JL, Pagano, I. (2001, in press). Ethnic differences in quality of life among early breast and prostate cancer survivors. *Psycho-Oncology.*
4. Gotay, CC, Holup, J, Muraoka, M. (2001, November. Quality of life in long-term prostate cancer survivors and their spouses. Abstract submitted to the International Society of Quality of Life Research Annual Meeting, Amsterdam, The Netherlands.
5. Gotay, CC, Holup, J, Muraoka, M. (1999, March). Quality of life in long-term survivors of breast and prostate cancer. Published abstract presented at the 1999 HMO Research Network Conference, Turtle Bay, Hawaii.

Why should your life's work be ruined by the cost of long term care?



Call
Long Term Care Insurance Expert,
Charles Hong
Now.
Phone: 292-5585 / Pager: 289-1234

We bring good things to life.

Insurance products underwritten by General Electric Capital Assurance Company.

Classified Notices

To place a classified notice:

HMA members.–Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.

Nonmembers.–Please call 536-7702 for a non-member form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Physician Wanted

ASSISTANT / ASSOCIATE / FULL PROFESSOR OF MEDICINE– M3/M4/M5, one position, Position No. 0082790T, Dean's Office/Geriatric Medicine Program, UH John A. Burns School of Medicine, part-time or full-time, 11 month, non-tenurable, temp general funds, NTE 06/30/02, renewable depending on performance and/or funding, to begin approximately August 01, 2001, pending position clearance and availability of funds. The John A. Burns School of Medicine at the University of Hawaii seeks a board certified or board eligible internist or family practitioner to serve as a physician at the Hawaii State Hospital in Kaneohe, Hawaii. The successful applicant will be a physician who by academic standing and appropriate experience is qualified for an appointment to the medical school faculty at the Assistant/Associate/Professor level. **Duties:** Work under direct supervision of the Director of Medical Services and provides direct clinical services for inpatients of the Hawaii State Hospital and is the primary back-up physician to cover for absences of other medical services physicians because of vacation, sick leave or other approved absences. Will also serve as a member of appropriate hospital committees. Will be on the regular faculty of the medical school and will be expected to undertake teaching and scholarly activities commensurate with the academic rank. **Minimum Qualifications: (Assist)** MD or DO degree; Board Certified (or eligible) by the American Board of Internal Medicine or American Board of Family Practice, and demonstrate ability in teaching: **(Assoc)** Same as Assistant plus four years at the rank of Assistant Professor or equivalent combination of teaching and experience; ABIM or ABFP boards in subspecialty as appropriate; and proven ability in teaching, research, and programs administration; **(Prof)** Same as Associate plus four years at the rank of Associate Professor or any equivalent combination of teaching and experience. **Desirable Qualifications:** Interest and experience in working with psychiatric patients; familiarity with local Hawaii culture; ability to work as a member of an interdisciplinary team; interest and experience in medical school teaching as a clinical or regular faculty member. **Minimum Annual Salary (at full time):** (Assist): $78,924; (Assoc): $92,340; (Prof): $99,876. May be subject to collective bargaining increase. Salary commensurate with experience. **To apply:** Send updated CV, bibliography, letter of application, and five names of reference to Patricia Lanoie Blanchette, M.D., MPH, UH John A. Burns School of Medicine, 347 No. Kuakini St., HPM-9, Honolulu, HI 96817 (808-523-8461; FAX 808-528-1897) pblanch944@aol.com. **Closing date:** 07/17/01. An EEO/AA Institution.

The Weathervane Russell T. Stodd MD

If The Shoe Fits, Find Another. You'll Have A Pair.
Despite the determined efforts of the aggressive optometrists, HOS leadership with help from the Hawaii Medical Association, was successful in diluting and restructuring the proposed optometry legislation in the last legislative session. The medical issues which presented a threat to the public were removed. However, there is an underlying message (from a legislator) which is ignored by too many of our members. As long as some of our eye surgeons work with optometrists in providing their education, and also in sharing patient care, the definition of eye MD will be increasingly difficult to maintain. It cannot be both ways! We cannot complain to legislators and request their cooperation on medical issues about the expansion of the scope of practice of optometry, yet continue to work with them in our offices and allow them to provide medical care!! The public often does not know there is a difference, and many legislators do not know either. So, those of you reading this who are selling your medical skills and knowledge to physician wannabes in order to increase your surgical practice, wake up before all the lines disappear, and you wonder where your profession went.

Trauma Is A Growth Industry.
When you are on call for a hospital emergency room, what is your obligation regarding patients not known to you? If the ER physician makes no effort to contact you, and merely discharges the patient with instructions to contact you if necessary for further care, there is no apparent liability on your part. If the ER physician contacts you for assistance in managing the patient, and then discharges the patient with instructions to see you for subsequent care, a doctor-patient relationship becomes a fact. You have an obligation to see the patient for follow-up, or arrange for a referral if that is appropriate. If the patient does not contact you, it is necessary to make an effort to remind the patient of the need for follow-up care, and if the condition is more serious, you might need to be more persistent, including even sending a registered letter. It's a dangerous world out there.

Was It Good For You, Darling?
Investigators at Medtronic are wondering whether to embrace the apparent amorous possibilities of their new pain device. While positioning a spinal cord stimulator near the spinal cord of a female patient suffering from chronic back pain, the pain specialist heard the patient give a groan as if in orgasmic pleasure. When the doctor asked the patient about it, she replied, "You're going to have to teach my husband how to do that." A news account picked up on the discovery and produced a headline, "Doctor stumbles on orgasm machine." Medtronic stock jumped $1.36/share, and the stock closed higher for four consecutive days. A company spokesman noted that a few urologists have reported some patients have claimed improved sexual function after having a Medtronic device implanted to stimulate their bladders. A stuffy, unamused researcher stated, "that is a far cry from sexual stimulation on demand, and there is no clinical data in this area." Hey, get with the program, Doc. Nothing sells like sex. Ask Bob Dole. Ask Pfizer.

Errors Have Been Made. Others Will Be Blamed.
Murderers, burglars, rapists and arsonists can still apply for federal aid to education, but one misdemeanor conviction for possession of marijuana is taboo. A history of a single conviction for pot possession, by far the most common drug charge, disqualifies the student for one year. The length of ineligible time varies with the seriousness of the drug crime and the number of offenses. The law was passed three years ago with scant debate as part of a bill re-authorizing all federal spending for post-secondary education. About 26,000 people appear ineligible for federal financial aid for the upcoming school year. Some student groups and many campus administrators have opposed the bill since its inception. Now, U.S. Rep. Mark Souder, (R) Indiana, one of the bills sponsors, wants to change the law. He stated that the intent was only to penalize students who were convicted while receiving federal aid, not to have any retroactive function.

Nothing Is More Boring Than Listening To Someone Recite A Dream.
A very interesting finding was noted in four patients with sleep apnea syndrome. The four complained of unilateral visual loss and were found to have bilateral disc edema with asymmetric or unilateral optic nerve dysfunction. Neuro-imaging studies were negative for mass lesions, venous sinus thrombosis, or hydrocephalus. Cerebro-spinal fluid pressures were normal, but were believed to increase with sleep. Investigators have postulated that papilledema in these patients is due to episodic nocturnal hypoxemia and elevated carbon dioxide with secondary cerebral vasodilation. The patients did not present with signs of increased intra-cranial pressure, but instead came in with visual complaints.

Power Corrupts! Absolute Power... Is Kind Of Nice, If You're HMSA.
A Hawaii magazine, *Island Business,* ran a special report on Hawaii Medical Services Association called An "800 pound gorilla." The article notes that last fall several doctors and insurance executives were interviewed by investigators from the U.S. Department of Justice. The probe appears directed around HMSA's market dominance and role on the state's Prepaid Healthcare Advisory Council. The HMSA board of directors is made up of some of Hawaii's true power elite, including executives of major banks, unions and businesses. State regulators are concerned about the monopolistic picture, because HMSA virtually controls the indemnity market. HMSA has 622,000 members, 95% of the fee-for-service market, assets of $861 million, investments of $687 million, and annual revenue in excess of $1 billion. An additional bonus is that as a "mutual benefit society" HMSA escapes the 4.17% gross excise tax which virtually everyone else pays. In the past two years, rates have increased 13% and are scheduled for a 10% hike next year! Physicians in this state see no alternative but to participate with HMSA in their program of 'preferred providers.' Wayne Metcalf, state insurance commissioner, says he is uncomfortable with the lack of competition, but claims that state law does not regulate health insurance rates. HMSA's senior vice president, Cliff Cisco, says he does not know what prompted the federal inquiry. Paul Tom, chairman of the Prepaid Healthcare Advisory Council, doesn't like HMSA's attitude. "They are the biggest in town and they say, 'Play by my rules or don't play at all.' That's being a bully." Hey, if it looks like an insurance company, smells like an insurance company, and behaves like an insurance company, why is it called a *mutual benefit society?*

Righteous People Terrify Me.
In Massachusetts, a law was enacted in the 1960s which banned tattooing by laymen. The law prescribed a fine of $300 or jail time up to one year for violators, however no one had ever been prosecuted. Now Superior Court Judge Barbara Rouse has ruled that the ban against lay tattoo artists is unconstitutional, and she ruled in favor of two Martha's Vineyard residents who had filed a suit against the state. "Tattooing is an ancient art form which has been practiced in virtually every culture. Tattoos demonstrate commitment to political and personal beliefs," said the judge. State health officials argued that the ban protected those butterfly-thigh and other exhibitionists desiring to state "political and personal beliefs," from contaminated needles, and thus provided a semblance of protection from HIV and hepatitis viruses. The judge suggested that the state could satisfy their concerns and make some money also by regulating and licensing the art. What wonderful legal progress! Remove a statute never enforced and replace it with a licensing and regulating bureau.

ADDENDA
❖ More Americans are arrested for drunken driving than for any other crime.
❖ Ancient Egyptians shaved off their eyebrows when their cats died as a sign of mourning.
❖ If ice fishermen sit on the ice too long, do they develop polaroids?
❖ I saw "Crouching Tiger, Hidden Dragon" and loved it. An hour later I wanted to see it again.

Aloha and keep the faith —rts■

Contents of this column do not necessarily reflect the opinion or position of the Hawaii Ophthalmological Society. Editorial comment is strictly that of the writer.



Checked your practice lately?

You strive to be the best practitioner you can. You stay current in your field. You spend countless hours checking on the health of your patients.

Who is checking on the health of your practice?

Is your business thriving? Should you understand the cash flow side of your business better than you do?

TeamPraxis manages the business side of medicine. We optimize your:

- ***CPT coding.***
- ***Patient billing and collection.***
- ***A/R management.***
- ***Cash flow.***
- ***Work flow management.***

Give us a call to get a free consultation.

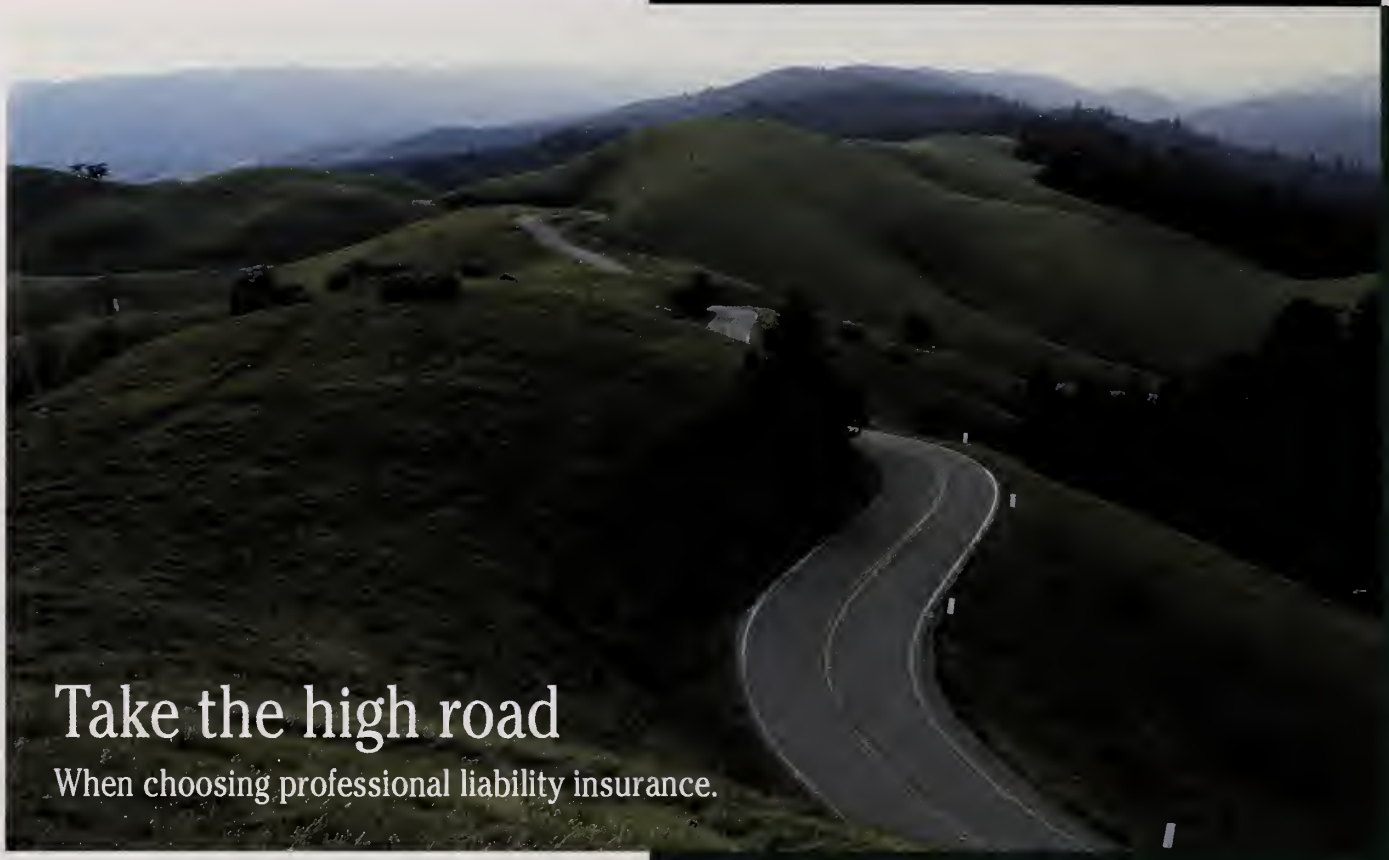
TeamPraxis™

Your practice management team.

948-9343

Neighbor Islands, call
866-TPRAXIS
(866-877-2947)

www.TeamPraxis.com



NO RATE INCREASE IN 2001

MIEC

Medical Insurance Exchange of California

6250 Claremont Avenue
Oakland, California 94618
800-227-4527
www.miec.com

HAWAII CLAIMS OFFICE:
1360 South Beretania Street,
Honolulu, Hawaii 96814

Rated "A" (Excellent) by A.M. Best

Sponsored by the Hawaii Medical Association

THE SAFEST ROUTE IS
WITH AN EXPERIENCED GUIDE.

In Hawaii, that's MIEC. We are the West's first physician-owned, not-for-profit professional liability insurer. For more than a quarter century, we've protected doctors with financially secure coverage. We're also known for our unsurpassed, consistent track record of returning dividend credits to policyholders, when results permit. We've returned over $200 million.

Medical liability insurance is a long-term relationship. At MIEC, we take that commitment seriously.

Choose the genuine original, MIEC.

Hawaii medical journal
v. 60
no. 7
July 2001
Received on: 08-01-01
Brown University Library
SCI

HAWAII MEDICAL JOURNAL

1-SIZE
R15
H25x
SCI

August 2001 Volume 60, No. 8 ISSN: 0017-8594



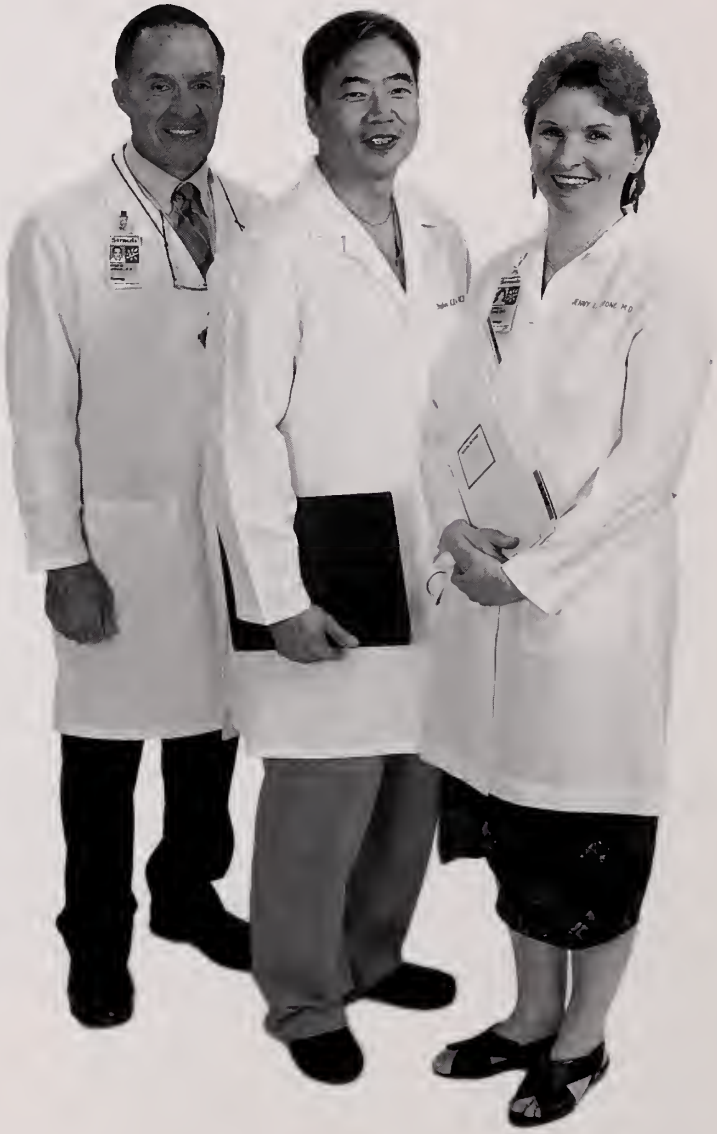
HAWAII MEDICAL ASSOCIATION 1856

Our pledge to you

As Straub physicians, we welcome your referrals... and pledge to:

- Report our evaluation to you promptly by phone, fax or mail (whatever you prefer).
- Never make secondary referrals without your approval.
- Always direct the patient back to you for continuing care.

To make your referrals easy, we have a Physician Referral Specialist, Kym Kaohi. To contact Kym and to get a binder on Straub specialists and services, call 522-4444.



KYM KAOHI, MA • PHYSICIAN REFERRAL SPECIALIST



For assistance, call Kym at 522-4444

Straub
Partners in health
straubhealth.com

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA

SOLUTIONS THAT SAVE

TIME & MONEY



Digital imaging of your documents is the advanced technology that will save your practice time and money.

- Indexing of documents provide digital search and retrieval capabilities
- Immediate access to patient files
- Quick and easy file sharing with other physicians
- Affordable and cost effective
- Rapid turnaround

Call us today at (808) 440-8508 or visit us at www.synterasolutions.com

SYNTERA
Solutions

BUILDERS OF NEXT GENERATION IMAGING SOLUTIONS & STORAGE AREA NETWORKS

Schering/Key Pharmaceutical

Claritin-D 12 Hour
(5 mg loratadine/120 mg pseudoephedrine sulfate, USP)
Extended Release Tablets

Claritin-D 24 Hour
(10 mg loratadine/240 mg pseudoephedrine sulfate, USP)
Extended Release Tablets

Claritin RediTabs
10 mg (loratadine rapidly-disintegrating tablets)

Claritin Syrup
(loratadine) 10 mg per 10 mL

Once-a-day nasonex (mometasone furoate monohydrate) Nasal Spray, 50 mcg

Claritin 10 mg TABLETS (loratadine)

Tequin gatifloxacin

Schering **Velvet Agena-Chee**
Senior Sales Representative
Voice Mail (800) 782-2347
Box 3858

Schering **Donn keoki Arizumi**
Pharmaceutical Representative
Voice Mail (800) 544-5420
Box 8058

KEY **Shawn Brady**
Sales Representative
Telephone (808) 387-1409
Voice Mail (800) 554-5420
Box 1342
FAX (808) 373-1772
E-Mail shawn.brady@spcorp.com

Schering **Mark Buquoi**
Sales Representative
Telephone (808) 384-3862
Voice Mail (800) 544-5420
Box 9795
FAX (808) 841-6105

Schering **Dennis M. Hamamura**
Senior Pharmaceutical Rep.
Telephone (808) 671-0225
Voice Mail (800) 544-5420
Box 8774
FAX (808) 671-0817

KEY **Carol K. Honda**
Sales Representative
Voice Mail (800) 554-5420
Box 8322
FAX (808) 593-1776

Schering **Rachelle Hyde**
Sales Representative
District Trainer
Voice Mail (800) 782-2347
Box 3861

KEY **Caroline Perry**
Sales Representative
Voice Mail (800) 554-5420
Box 1274
E-Mail Caroline.perry@spcorp.com

Schering **Brian Souza**
District Account Representative
Telephone (808) 394-9475
Voice Mail (800) 554-5420
Box 6811
FAX (808) 394-9475
E-Mail brian.souza@spcorp.com

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
John Breinich MLS, Satoru Izutsu PhD,
James Lumeng MD, Douglas G. Massey MD,
Myron E. Shirasu MD, Frank L. Tabrah MD,
Alfred D. Morris MD

Journal Staff
Editorial Assistant: Drake Chinen

Officers
President: Philip Hellreich MD
President-Elect: Gerald McKenna MD
Secretary: Calvin Wong MD
Treasurer: Paul DeMare MD
Past President: James Lumeng MD

County Presidents
Hawaii: David Camacho MD
Honolulu: William McKenzie MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Gardner Quarton MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 2001 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 202

Commentary
Karyn Buxman RN, MSN, CSP 202

Box jellyfish (*Carybdea alata*) in Waikiki: The analgesic effect of Sting-Aid, Adolph's meat tenderizer and fresh water on their stings. A double-blinded, randomized, placebo-controlled clinical trial.
Craig S. Thomas MD, Susan A. Scott RN, BA, Daniel J. Galanis PhD, and Ralph S. Goto BA 205

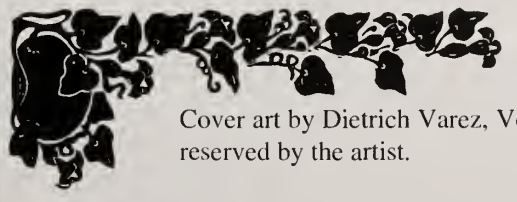
Medical School Hotline
T. Samuel Shomaker MD, JD 211

Cancer Research Center Hotline
Sharon Shigemasa RN, MS and Car-Wilhelm Vogel MD, PhD 213

News and Notes
Henry N. Yokoyama MD 214

Classified Notices 217

Weathervane
Russell T. Stodd MD 218



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

Aku Boat

Shown here is a typical scene on a tuna fishing boat in Hawaii.

Editorial

Norman Goldstein MD
Editor, Hawaii Medical Journal

This month we feature a manuscript on an all too familar topic, the problem of box jellyfish in Hawaii waters.

We published an earlier study by Craig Thomas MD and Susan Scott RN and their associates in the April 2001 issue of the Journal dealing specifically with the effects of hot or cold packs on box jellyfish stings. In this follow-up manuscript, emergency room physician Craig Thomas MD, Honolulu Star-Bulletin marine science writer Susan Scott RN, working with Daniel Galanis PhD, an epidemiologist with the Hawaii Department of Health, and Ralph Goto BEd, the very experienced water safety administrator with the City and County of Honolulu Parks and Recreation Department, study the efficacy of some popular remedies of box jellyfish stings.

Aldoph Meat Tenderizer has been used ever since the late Harry Arnold Jr. MD proposed its trial in the late 1960s. Despite the negative results of the study, beach-goers will undoubtedly continue to use this treatment for their stings. Other home remedies such as the application of figs, mustard, manure and perphaps the most common urine, will also persist. Hopefully, the work of these authors will help get the message out that they just don't work!

The most effective method of relief recommended by the authors is to spray or pour vinegar on the stung areas to inactivate the nematocysts, then flush the remaining tentacles with fresh or salt water, and either apply hot or cold packs or take hot or cold showers, "whichever makes the victims feel better."

The troika of books by Craig Thomas ans Susan Scott: "All Stings Considered: First Aid and Medical Treatment of Hawaii's Marine Injuries", "Pests of Paradise" and "Poisonous Plants of Paradise" belong in every physician's office, first-aid station, school nurse's office, and hospital emergency room in our state. If you don't have them yet, I strongly urge that you add them to your library.

"Our AMA" or "How to cover collective assets"

Many of our readers go right to the back page to start reading the Hawaii Medical Journal. Just in case you don't read it back to front, or if you missed the item by our Contributing Editor Russell Stodd MD go to it right now.

The AMA needs leaders that lead. The AMA and HMA have lost too many members. Fortunately the HMA is on the road to recovery, but we need a more active membership. We need your commitment.

Commentary

Today's Health Crisis: A Laughing Matter?

Karyn Buxman RN, MSN, CSP

According to a recent study, one of every three U.S. nurses surveyed under age 30 planned to leaved their jobs within the next year. One in five nurses plans to leave the profession within five years because of unsatisfactory working coniditions. According to the Bureau of Labor Statistics, 450,000 additional registered nurse will be needed to fill the present demand through the year 2008. Experts worry about the year 2020, when the registered nurse shortage is projected to reach 500,000 positions, coinciding with the increasing needs of healthcare in an aging US population.

It is obious that the state of health care today is no joke. But it may be a laughing matter, if one understands the premise that humor oftentimes is generated by painful circumstances. There is nothing funny about unlimited resources, job security or a physician who responds quickly and cheerfully to a nurse's request. The things that make nurses laugh tend to be the very things that drive nurses crazy.

While nurses often have no control over all the stressful events that happen in their lives, they do have a choice in how they respond to those happenings. No single strategy will be appropriate for every situation, so a healthy individual must have a repertoire of responses. Numerous means of coping with stress in a healthy manner are available, but one of those ways is with humor.

There are three primary functions of humor in the healthcare setting: psychological, social, and communicational.

Psychological: As nurses become more anxious and their focus becomes narrower, they become less creative and are more easily angered. Stress may not come from the event itself, as much as from the nurse's perception of that event. Humor provides a perceptual flexibility that can increase one's sense of control. Learning techniques such as *catastrophing the event*, where one takes the situation at hand and looks for the absurdity by asking, "How could this be worse?" may help the nurse put the event into its proper perspective.

Social: As Victor Borge, a well-known comedian, said so eloquently, "Laughter is the shortest distance between two people." When two or more can share in amusement, there is a commonality experienced among them, thus creating a bond. Some types of shared humor, such as self-effacing humor, reveal one's own flaws, 'humanness' and vulerability. This 'revelation' creates an environment where the listener feels that it's safe to share, helping to develop rapport and establish or strengthen relationships. For that moment, the humor helps to diminish the perceived hierachy, such as nurse/patient, doctor/nurse, or teacher/student while all involved participate in the fun.

Communicational: Sometimes a joke is just a joke. But often, true words are spoken in jest. It may be helpful for the nurse to know that frequently people will present a serious concern in the guise of a joke. A patient may joke about an embarrassing or frightening

Continued on p. 212



Please see brief summary of prescribing information on the following page.

Fujisawa Healthcare, Inc.

©2001 Fujisawa Healthcare, Inc. PT127 6/01

BRIEF SUMMARY

47002/Issued: December 2000

Protopic®
(tacrolimus)

Ointment 0.03%
Ointment 0.1%

FOR DERMATOLOGIC USE ONLY
NOT FOR OPHTHALMIC USE

INDICATIONS AND USAGE:
PROTOPIC Ointment, both 0.03% and 0.1% for adults, and only 0.03% for children aged 2 to 15 years, is indicated for short-term and intermittent long-term therapy in the treatment of patients with moderate to severe atopic dermatitis in whom the use of alternative, conventional therapies are deemed inadvisable because of potential risks, or in the treatment of patients who are not adequately responsive to or are intolerant of alternative, conventional therapies.

CONTRAINDICATIONS:
PROTOPIC Ointment is contraindicated in patients with a history of hypersensitivity to tacrolimus or any other component of the preparation.

PRECAUTIONS:
General

Studies have not evaluated the safety and efficacy of PROTOPIC Ointment in the treatment of clinically infected atopic dermatitis. Before commencing treatment with PROTOPIC Ointment, clinical infections at treatment sites should be cleared.

While patients with atopic dermatitis are predisposed to superficial skin infections including eczema herpeticum (Kaposi's varicelliform eruption), treatment with PROTOPIC Ointment may be associated with an increased risk of varicella zoster virus infection (chicken pox or shingles), herpes simplex virus infection, or eczema herpeticum. In the presence of these infections, the balance of risks and benefits associated with PROTOPIC Ointment use should be evaluated.

In clinical studies, 33 cases of lymphadenopathy (0.8%) were reported and were usually related to infections (particularly of the skin) and noted to resolve upon appropriate antibiotic therapy. Of these 33 cases, the majority had either a clear etiology or were known to resolve. Transplant patients receiving immunosuppressive regimens (e.g., systemic tacrolimus) are at increased risk for developing lymphoma; therefore, patients who receive PROTOPIC Ointment and who develop lymphadenopathy should have the etiology of their lymphadenopathy investigated. In the absence of a clear etiology for the lymphadenopathy, or in the presence of acute infectious mononucleosis, discontinuation of PROTOPIC Ointment should be considered. Patients who develop lymphadenopathy should be monitored to ensure that the lymphadenopathy resolves.

The enhancement of ultraviolet carcinogenicity is not necessarily dependent on phototoxic mechanisms. Despite the absence of observed phototoxicity in humans (see **ADVERSE REACTIONS**), PROTOPIC Ointment shortened the time to skin tumor formation in an animal photocarcinogenicity study (see **Carcinogenesis, Mutagenesis, Impairment of Fertility**). Therefore, it is prudent for patients to minimize or avoid natural or artificial sunlight exposure.

The use of PROTOPIC Ointment may cause local symptoms such as skin burning (burning sensation, stinging, soreness) or pruritus. Localized symptoms are most common during the first few days of PROTOPIC Ointment application and typically improve as the lesions of atopic dermatitis heal. With PROTOPIC Ointment 0.1%, 90% of the skin burning events had a duration between 2 minutes and 3 hours (median 15 minutes). Ninety percent of the pruritus events had a duration between 3 minutes and 10 hours (median 20 minutes). The use of PROTOPIC Ointment in patients with Netherton's Syndrome is not recommended due to the potential for increased systemic absorption of tacrolimus. The safety of PROTOPIC Ointment has not been established in patients with generalized erythroderma.

Information for Patients
(See patient package insert)
Patients using PROTOPIC Ointment should receive the following information and instructions:

1. Patients should use PROTOPIC Ointment as directed by the physician. PROTOPIC Ointment is for external use only. As with any topical medication, patients or caregivers should wash hands after application if hands are not an area for treatment.
2. Patients should minimize or avoid exposure to natural or artificial sunlight (tanning beds or UVA/B treatment) while using PROTOPIC Ointment.
3. Patients should not use this medication for any disorder other than that for which it was prescribed.
4. Patients should report any signs of adverse reactions to their physician.
5. Before applying PROTOPIC Ointment after a bath or shower, be sure your skin is completely dry.

Drug Interactions
Formal topical drug interaction studies with PROTOPIC Ointment have not been conducted. Based on its minimal extent of absorption, interactions of PROTOPIC Ointment with systemically administered drugs are unlikely to occur but cannot be ruled out. The concomitant administration of known CYP3A4 inhibitors in patients with widespread and/or erythrodermic disease should be done with caution. Some examples of such drugs are erythromycin, itraconazole, ketoconazole, fluconazole, calcium channel blockers and cimetidine.

Carcinogenesis, Mutagenesis, Impairment of Fertility
No evidence of genotoxicity was seen in bacterial (*Salmonella* and *E. coli*) or mammalian (Chinese hamster lung-derived cells) *in vitro* assays of mutagenicity, the *in vitro* CHO/HGPRT assay of mutagenicity, or *in vivo* clastogenicity assays performed in mice. Tacrolimus did not cause unscheduled DNA synthesis in rodent hepatocytes.

Reproductive toxicology studies were not performed with topical tacrolimus.

Pregnancy:
Teratogenic Effects: Pregnancy Category C
There are no adequate and well-controlled studies of topically administered tacrolimus in pregnant women. The experience with PROTOPIC Ointment when used by pregnant women is too limited to permit assessment of the safety of its use during pregnancy.

There are no adequate and well-controlled studies of systemically administered tacrolimus in pregnant women. Tacrolimus is transferred across the placenta. The use of systemically administered tacrolimus during pregnancy has been associated with neonatal hyperkalemia and renal dysfunction. PROTOPIC Ointment should be used during pregnancy only if the potential benefit to the mother justifies a potential risk to the fetus.

Nursing Mothers
Although systemic absorption of tacrolimus following topical applications of PROTOPIC Ointment is minimal relative to systemic administration, it is known that tacrolimus is excreted in human milk. Because of the potential for serious adverse reactions in nursing infants from tacrolimus, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.

Pediatric Use
PROTOPIC Ointment 0.03% may be used in pediatric patients 2 years of age and older. Two phase 3 pediatric studies were conducted involving 606 patients 2-15 years of age: one 12-week randomized vehicle-controlled study and one open-label, 1 year, long-term safety study. Three hundred and thirty (330) of these patients were 2 to 6 years of age.

The most common adverse events associated with PROTOPIC Ointment application in pediatric patients were skin burning and pruritus (see **ADVERSE REACTIONS**). In addition to skin burning and pruritus, the less common events (< 5%) of varicella zoster (mostly chicken pox), and vesiculobullous rash were more frequent in patients treated with PROTOPIC Ointment 0.03% compared to vehicle. In the long-term 1 year safety study involving 255 pediatric patients using PROTOPIC Ointment, the incidence of adverse events, including infections, did not increase with increased duration of study drug exposure or amount of ointment used. In 491 pediatric patients treated with PROTOPIC Ointment, 3(0.6%) developed eczema herpeticum. Since the safety and efficacy of PROTOPIC Ointment have not been established in pediatric patients below 2 years of age, its use in this age group is not recommended.

Geriatric Use
Twenty-five (25) patients ≥ 65 years old received PROTOPIC Ointment in phase 3 studies. The adverse event profile for these patients was consistent with that for other adult patients.

ADVERSE REACTIONS:

No phototoxicity and no photoallergenicity was detected in clinical studies of 12 and 216 normal volunteers, respectively. One out of 198 normal volunteers showed evidence of sensitization in a contact sensitization study.

In three randomized vehicle-controlled studies and two long-term safety studies, 655 and 571 patients respectively, were treated with PROTOPIC Ointment.

The following table depicts the adjusted incidence of adverse events pooled across the 3 identically designed 12- week studies for patients in vehicle, PROTOPIC Ointment 0.03%, and PROTOPIC Ointment 0.1% treatment groups, and the unadjusted incidence of adverse events in two one year long-term safety studies, regardless of relationship to study drug.

Incidence Of Treatment Emergent Adverse Events

	12-Week, Randomized, Double-Blind, Phase 3 Studies 12-Week Adjusted Incidence Rate (%)					Open-Label Studies (up to 1 year) 0.1% Tacrolimus Ointment Incidence(%)	
	Adult			Pediatric		Adult	Pediatric
	Vehicle n=212	0.03% Tacrolimus Ointment n=210	0.1% Tacrolimus Ointment n=209	Vehicle n=116	0.03% Tacrolimus Ointment n=118	n=316	n=255
Skin Burning†	26	46	58	29	43	47	26
Pruritus‡	37	46	46	27	41	25	25
Flu-like symptoms†	19	23	31	25	28	22	35
Allergic Reaction	8	12	6	8	4	22	15
Skin Erythema	20	25	28	13	12	12	9
Headache†	11	20	19	8	5	10	18
Skin Infection	11	12	5	14	10	11	11
Fever	4	4	1	13	21	2	18
Infection	1	1	2	9	7	14	8
Cough Increased	2	1	1	14	18	3	15
Asthma	4	6	4	6	6	5	16
Herpes Simplex	4	4	4	2	0	12	5
Eczema Herpeticum	0	1	1	0	2	2	0
Pharyngitis	3	3	4	11	6	5	10
Accidental Injury	4	3	6	3	6	4	12
Pustular Rash	2	3	4	3	2	6	8
Folliculitis‡	1	6	4	0	2	11	2
Rhinitis	4	3	2	2	6	5	5
Otitis Media	4	0	1	6	12	1	7
Sinusitis†	1	4	2	8	3	3	7
Diarrhea	3	3	4	2	5	4	6
Urticaria	3	3	6	1	1	5	5
Lack of Drug Effect	1	1	0	1	1	10	2
Bronchitis	0	2	2	3	3	3	6
Vomiting	0	1	1	7	6	1	5
Maculopapular Rash	2	2	2	3	0	4	3
Rash†	1	5	2	4	2	2	5
Abdominal Pain	3	1	1	2	3	1	5
Fungal Dermatitis	0	2	1	3	0	2	6
Gastroenteritis	1	2	2	3	0	4	2
Alcohol Intolerance†	0	3	7	0	0	6	0
Acne†	2	4	7	1	0	2	4
Sunburn	1	2	1	0	0	4	4
Skin Disorder	2	2	1	1	4	1	4
Conjunctivitis	0	2	2	2	1	4	2
Pain	1	2	1	0	1	4	3
Vesiculobullous Rash†	3	3	2	0	4	2	2
Lymphadenopathy	2	2	1	0	3	2	3
Nausea	4	3	2	0	1	1	2
Skin Tingling†	2	3	8	1	2	2	1
Face Edema	2	2	1	2	1	3	1
Dyspepsia†	1	1	4	0	0	1	4
Dry Skin	7	3	3	0	1	0	1
Hyperesthesia†	1	3	7	0	0	3	0
Skin Neoplasm Benign‡‡	1	1	1	0	0	2	3
Back Pain†	0	2	2	1	1	3	1
Peripheral Edema	2	4	3	0	0	2	1
Varicella Zoster/ Herpes Zoster†‡	0	1	0	0	5	1	3
Contact Dermatitis	1	3	3	3	4	1	1
Asthenia	1	2	3	0	0	2	1
Pneumonia	0	1	1	2	0	1	2
Eczema	2	2	2	0	0	3	0
Insomnia	3	4	3	1	1	1	0
Exfoliative Dermatitis	3	3	1	0	0	0	2
Dysmenorrhea	2	4	4	0	0	0	2
Periodontal Abscess	1	0	1	0	0	3	0
Myalgia†	0	3	2	0	0	1	0
Cyst†	0	1	3	0	0	0	0

† May be reasonably associated with the use of this drug product

‡ Four cases of chicken pox in the pediatric 12-week study; 1 case of "zoster of the tip" in the adult 12-week study; 7 cases of chicken pox and 1 case of shingles in the open-label pediatric study; 2 cases of herpes zoster in the open-label adult study.

‡‡ Generally "warts".

Other adverse events which occurred at an incidence greater than or equal to 1% in any clinical study include: alopecia, ALT or AST increased, anaphylactoid reaction, angina pectoris, angioedema, anorexia, anxiety, arrhythmia, arthralgia, arthritis, bilirubinemia, breast pain, cellulitis, cerebrovascular accident, cheilitis, chills, constipation, creatinine increased, dehydration, depression, dizziness, dyspnea, ear pain, ecchymosis, edema, epistaxis, exacerbation of untreated area, eye disorder, eye pain, furunculosis, gastritis, hernia, hyperglycemia, hypertension, hypoglycemia, hypoxia, laryngitis, leukocytosis, leukopenia, liver function tests abnormal, lung disorder, malaise, migraine, neck pain, neuritis, palpitations, paresthesia, peripheral vascular disorder, photosensitivity reaction, procedural complication, routine procedure, skin discoloration, sweating, taste perversion, tooth disorder, unintended pregnancy, vaginal moniliasis, vasodilatation, and vertigo.

OVERDOSAGE:
PROTOPIC Ointment is not for oral use. Oral ingestion of PROTOPIC Ointment may lead to adverse effects associated with systemic administration of tacrolimus. If oral ingestion occurs, medical advice should be sought.

DOSAGE AND ADMINISTRATION:
ADULT
PROTOPIC Ointment 0.03% and 0.1%

Apply a thin layer of PROTOPIC Ointment 0.03% or 0.1% to the affected skin areas twice daily and rub in gently and completely. Treatment should be continued for one week after clearing of signs and symptoms of atopic dermatitis.

The safety of PROTOPIC Ointment under occlusion which may promote systemic exposure, has not been evaluated. **PROTOPIC Ointment 0.03% and 0.1% should not be used with occlusive dressings.**

PEDIATRIC
PROTOPIC Ointment 0.03%

Apply a thin layer of PROTOPIC Ointment 0.03% to the affected skin areas twice daily and rub in gently and completely. Treatment should be continued for one week after clearing of signs and symptoms of atopic dermatitis. The safety of PROTOPIC Ointment under occlusion, which may promote systemic exposure, has not been evaluated. **PROTOPIC Ointment 0.03% should not be used with occlusive dressings.**

Rx only

Fujisawa Healthcare, Inc.
Deerfield, IL 60015-2548
47002/Issued: December 2000

Fujisawa Healthcare, Inc.

©2001 Fujisawa Healthcare, Inc. PT127 6/01

Box jellyfish (*Carybdea alata*) in Waikiki

The analgesic effect of Sting-Aid, Adolph's meat tenderizer and fresh water on their stings: A double-blinded, randomized, placebo-controlled clinical trial.

Craig S. Thomas MD*, Susan A. Scott RN, BA**, Daniel J. Galanis PhD***, and Ralph S. Goto BA****

Abstract

The study measured the analgesic effects of three popular Hawaii remedies for stings from the box jellyfish, Carybdea alata. *Analysis of data showed that aerosol sprays of Sting-Aid (an aluminum sulfate solution), Aldolph's meat tenderizer dissolved in water, and fresh water neither increased nor decreased the pain of box jellyfish stings more than the control (seawater).*

Introduction

Each month, swarms of spawning[1] box jellyfish, *Carybdea alata,* appear in the nearshore waters and on the beaches of Honolulu on the 9th or 10th days after the full moon.[2] It is not known why this occurs in this area.

Carybdea alata is about 3 to 4 inches high and about 2 inches wide, and has pinkish tentacles trailing from the four corners of the square bell. The tentacles, which measure about 2.5 feet long, bear stinging cells called nematocysts, which sting and immobilize jellyfish prey. These nematocysts also sting people when the two species inadvertently collide.

Each nematocyst consists of a barbed, toxin-bearing tubule folded inside a fluid-filled capsule. A touch to the outside wall of the capsule causes hydrostatic pressure inside to evert the tubule and force toxin through the barbs and into the skin. This eversion and discharge occurs within 3 microseconds making it one of the fastest known events in biology.[3] A nematocyst, therefore, can be thought of as a lighting-fast shotgun, the capsule being the cartridge case, the tubule being the shell, and the toxin-loaded barbs the buckshot.

The rash and pain caused by these box jellyfish stings are self-limited, usually disappearing with no treatment from 20 minutes to one day. A few victims suffer generalized reactions, persistent pain and/or recurring, itching rash. No confirmed deaths have occurred in Hawaii from box jellyfish stings, but the pain they inflict can be severe.

Home remedies for treating the pain of jellyfish stings are regional. Throughout the world people apply figs, mustard, manure and other substances on stings to ease the pain. Urine, usually the victim's own, is a widespread remedy common throughout the world, including Hawaii. Numerous Hawaii residents report that as children they were taught to urinate in a jar at home and then take the jar to the beach to pour on stings. Meat tenderizer is also an accepted remedy in Hawaii. Beach-goers commonly keep bottles of it in their vehicles or beach bags to treat stings.

Another sting treatment in the U.S. emerged in 1991. A Pompano Beach Florida company, Knight Industries, began selling Sting-Aid, a solution marketed to "relieve the pain from stings and bites of sea lice, jellyfish, hydroids, stingrays, spiked fish, stinging nettles, fire coral, wasps, bees, ants, ticks, mosquitoes and sand fleas." Hawaii lifeguards began using Sting-Aid on jellyfish and Portuguese man-of-war stings and it was sold in some Hawaii dive shops and drug stores.

The authors undertook this study because neither Aldolph's meat tenderizer, Sting-Aid nor fresh water had been studied as sting treatments in controlled, blinded clinical trials. Fresh water was included because some people report that taking a fresh water shower at the beach or at home after a sting relieved their pain. Others, however, report that applying fresh water to box jellyfish stings increased their pain. Before this study was done, it was not known if these treatments increased, decreased or had no effect on the pain of a sting.

Besides the value of this trial to victims, lifeguards and health care workers, Sting-Aid and Aldolph's meat tenderizer have been a significant expense to the Honolulu City and County's Division of Ocean Safety.

Methods

This is the second part of an ongoing study examining the efficacy of different temperatures and solutions in treating the pain of box jellyfish (*Carybdea alata*) and Portuguese man-of-war (*Physalia* spp.) stings in Hawaii. The authors have neither applied for nor received funding to conduct or support any part of this study, which has been approved by The University of Hawaii's Human Subjects Committee.

This part of the study was carried out from January 1999 through December 2000 at Waikiki lifeguard towers 2C and 2D. During these two years, no ambulance service was required for any victims in the study.

Each patient 7 years old or older who came to a lifeguard tower complaining of pain from a sting, and was not in need of emergency assistance (as determined by the lifeguards), was sprayed with vinegar. Immediately after the liberal spraying, the researchers sprayed one of four solutions in unmarked, opaque spray bottles labeled A, B, C, and D. Field workers chose one of the four bottles

Correspondence to:
Susan A. Scott RN, BA
365A Kaelepulu Drive
Kailua, HI 96734

randomly by reaching into a container and choosing the first one at hand. The spray bottles contained: A. fresh water, B. seawater (control) C. Sting-Aid, a commercial pain reliever consisting of water, detergent and aluminum sulfate (alum) and, D. Aldolph's meat tenderizer, a commercial food compound consisting of more than 99 percent salt, sugar, food starch and less than 1 percent papain. A mixture of one part Aldolph's powder in four parts of tap water produced a saturated solution.

Although applying a victim's own urine to his or her stings and marine injuries is one of the most common local remedies used in Hawaii, the authors deemed that testing it was inappropriate at a public beach.

After receiving the unmarked sprays, the victim made a single mark on a visual analog (VAS) pain scale from 1 to 100 millimeters at 0, 5, 10, and 15 minutes.

Results

Sample and Data Analysis

The dataset contained information on 63 individuals. However, one (in the fresh water group) dropped out after the vinegar dousing. The sample size for the analysis of pain score after treatment is therefore 62.

More serious sample attrition begins by the 5-minute mark. Only 56 participants gave complete data at 5 minutes, and only 32 at 10 minutes. Only 12 participants provided pain scores at 15 minutes, too few for analysis of treatment effects. Thus, the most reliable results are those from the pain scores at 0 and 5 minutes. There were no clear associations between the treatment group and the rate of dropping out.

Starting at the 5-minute pain score, two different analytic methods were used: one which considered only the data actually collected, and another method in which missing pain scores were imputed with the last pain score recorded. Both methods give results that are limited in comparison to the results from the pain score at 0 minutes. The former method does not take into account any treatment effect on dropping out, and the latter relies on imputed pain scores.

The pain scores were analyzed as both continuous and binary outcomes. Graphical analyses indicated the pain scores were somewhat skewed, so a square root transformation was used for the analysis of covariance. The results were similar to those with the untransformed data, however, so the latter are presented here for ease of interpretation. Nonparametric statistical tests also corroborated the results obtained with the untransformed data. The analysis of covariance described the inter-treatment differences in the mean pain scores at 0, 5, 10 and 15 minutes, with statistical control for the pain score at 0 minutes for the last 3 outcomes.

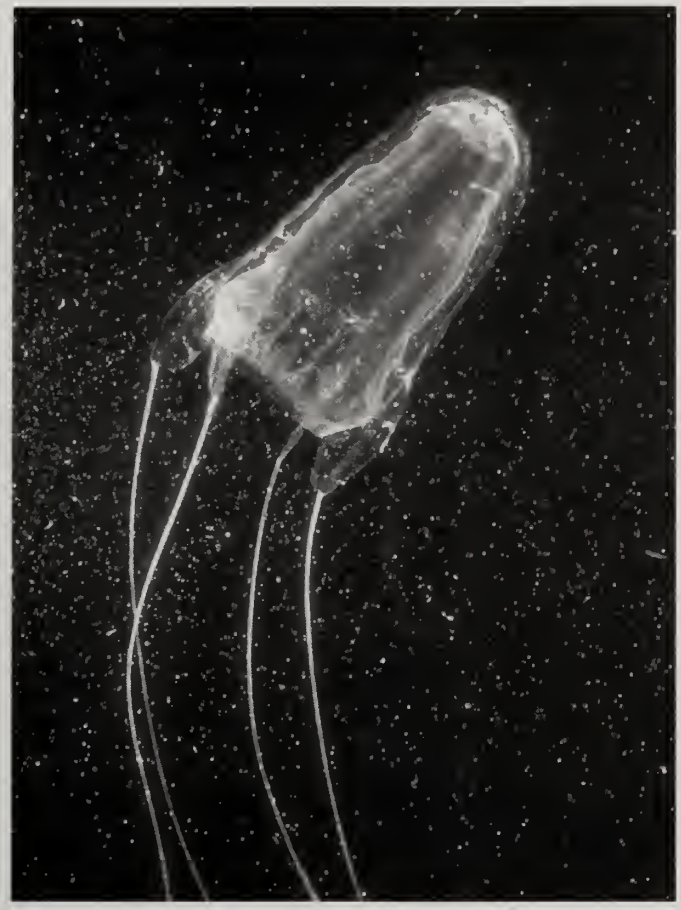
A binary outcome was also constructed, depending on whether the participant experienced complete cessation of pain or not over the 15 minute testing period. However, only 4 of the 62 participants reported a final pain score of "0", 2 in the salt water group, and 1 each in the fresh water and Adolph's group. (One participant reported a 0 score at 0 minutes, but re-elevated pain scores after 5 and 10 minutes.) Because of this low number, the definition of cessation of pain was widened to include a final pain score of 10, which then included 16 participants. A logistical regression model was used to analyze the odds of the cessation of pain across the treatment groups, while controlling for initial (after vinegar dousing) levels of pain. Results are summarized in the following table. The 4 treatment groups had comparable pain scores after the vinegar dousing, suggesting the treatment randomization resulted in 4 similar groups. There were no statistically significant differences in pain scores between the treatment groups at any of the 3 succeeding pain score estimations: at 0, 5 and 10 minutes. This lack of treatment effect was consistent across both methods of analysis. In Method 1, there were some differences of magnitude between groups at 5 minutes (e.g. Adolph's *vs.* salt water group) and 10 minutes (e.g. fresh water *vs.* Sting-Aid), but the corresponding small group sizes by these times make it difficult to detect statistically significant differences. (Note the standard error estimates increase at the 5- and 10-minute marks

Estimated* average pain scores, by 5-minute intervals and treatment group.

		Method 1[1]				Method 2[2]	
Group	time:	vinegar dousing	0 min.	5 min.	10 min.	5 min.	10 min.
Adolph's	n	14	14	11	6	14	14
	pain score	40.7	36.5	36.9	38.6	38.4	38.2
	standard error of pain score	6.7	3.7	5.8	9.9	5.1	5.1
Fresh	n	19	19	18	8	19	19
water	pain score	44.3	38.9	34.5	40.7	33.9	32.3
	standard error of pain score	5.8	3.2	4.6	8.8	4.4	4.4
Salt	n	16	16	14	9	16	16
water	pain score	42.5	35.2	28.1	35.2	29.9	29.1
	standard error of pain score	6.3	3.5	5.2	8.0	4.4	4.8
Sting-Aid	n	13	13	13	9	13	13
	pain score	46.9	34.2	35.3	32.8	35.0	30.0
	standard error of pain score	7.0	3.8	5.4	7.9	5.3	5.3

*Estimates at 0, 5, and 10 minutes are adjusted for pain level after vinegar dousing (vinegar dousing).
[1]Method 1 utilized only non-missing data in estimation of average pain scores.
[2]Method 2 imputed missing values after 5 minutes, using the last recorded pain level for all subsequent missing values.

The bottom of a box jellyfish (*Carybdea alata*) bell is almost perfectly square with tentacles about 2 feet long trailing from each of the four corners. These jellyfish swim about 2 miles per hour stinging shrimp and small fish with the abundant nematocysts on their tentacles. (Waikiki Aquarium)



This box jellyfish (*Carybdea alata*) was found swimming vigorously in the Ala Wai Boat Harbor on the 8th day after the full moon. The authors have handled these jellyfish by their bells often and suffered no stings. (Susan Scott)



in Method 1).

Prediction of the cessation of pain, by treatment group

The proportion of participants who experienced the cessation of pain within the study period was highest in the salt water group (6 of 16, or 38%) and lowest in the Adolph's group (2 of 14, or 14%). The proportions in the fresh water and Sting-Aid groups were 26% and 23%, respectively.

A logistical regression model was used to analyze the odds of cessation of pain across the treatment groups, while controlling for initial (after vinegar dousing) levels of pain. However, no significant differences were found for the odds of pain cessation across these 4 treatment groups.

Discussion

Analysis of early data showed that pain relief from the tested solutions was so similar to pain relief from the control (seawater) the authors terminated the study even though the dataset was smaller than needed for statistical significance. Continuing the study was not warranted since even with statistical significance, it was extremely unlikely that clinical significance would be achieved. Clinical significance was defined according to two emergency department studies on VAS scores that found the minimum clinically significant difference in VAS pain scores was 9 and 11.[4,5]

In discussing and studying the effects of jellyfish sting treatments, it is important to identify which facet of the sting is being addressed. Medically, there are three:

1. PREVENTING FURTHER INJURY. After a sting, invisible, undischarged nematocysts may remain on the skin's surface. To prevent further injury, these need to be inactivated.

2. CONTROLLING PAIN. Box jellyfish stings are painful. Sometimes the pain is severe, especially in sensitive areas, such as the face, neck, armpit or groin.

3. TREATING TOXIC REACTIONS. A few victims react to Hawaii's box jellyfish toxin more severely than others and have symptoms such as weakness, dizziness, nausea, vomiting and/or shortness of breath.

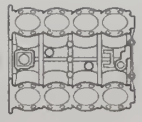
Continues on p. 210



*Based on manufacturer's data. **Based on *Ward's* Upper Luxury Class, comparably equipped models. INFINITI, the INFINITI logo, Accelerating the future, The New Q and INFINITI Model Names are Nissan

TheNewQ.com/340horsepowerV8

A performance-bred, 4.5-liter V8 engine. 0-60 mph in an exhilarating 5.9 seconds.* The most powerful V8 in its class.** The Q45 is quick. By anyone's standard.



It's All Yours, for 48 Hours

At Infiniti Motor Sales in Hawaii, we understand there is no better way for you to experience our vehicles than through a test drive. Not just any test drive. An extended 48-hour test drive*. Take the vehicle of your choice home, drive it to work, even around the island. It's all yours, for 48 hours. For more information about the Infiniti Guest Drive, stop by Infiniti Motor Sales in Hawaii at 2845 Kilihau Street, or call Steve Miyashiro at 836-0848 today.

* For qualified applicants. Must have valid Hawaii Drivers License. Must show proof of insurance. Other restrictions may apply.

Accelerating the future

INFINITI

trademarks. ©2001 INFINITI Division of Nissan North America, Inc.

"Box Jellyfish," continued from p. 207

In addition, nematocysts vary between species, so that a treatment that works for one facet of an injury in one species may or may not work for the same facet in another. For example, vinegar inactivates unfired nematocycts in box jellyfish but discharges them in some Portuguese man-of-wars. Because of this variability, and because jellyfish stings in Hawaii are usually self-limiting injuries, it is understandable that victims perceive a wide range of treatments as effective.

Meat tenderizer became a popular treatment in Hawaii after Honolulu dermatologist Harry L. Arnold recommended it for Portuguese man-of-war stings in a 1971 local publication.[6] Arnold developed this treatment based on a newspaper article he read in 1969 suggesting that meat tenderizer may relieve the pain of insect stings. He advised a patient to dissolve a teaspoon of meat tenderizer in a quarter cup of water and rub the solution into the stings. Because the pain was gone in "a minute or two" and the marks disappeared within 30 minutes, Arnold began treating his patients with meat tenderizer and published a paper recommending it.

Nine years later, in 1980, Australian researchers discovered that both household vinegar (2 – 10% acetic acid in water) and acetic acid (1.2% – 100% mixed in either water or seawater), rapidly, completely and irreversibly inhibited the discharge of nematocysts on the tentacles of the box jellyfish *Chironex fleckeri*.[7] Although the effect of vinegar on the nematocysts of *Carybdea alata* has not been published, the treatment is used routinely on those stings in Hawaii. Sometime after 1980, Hawaii residents began mixing Arnold's treatment for the pain of Portuguese man-of-war stings (Aldolph's meat tenderizer) with the Australians' treatment for preventing box jellyfish nematocysts from discharging toxin (vinegar). For years, this mixture of meat tenderizer and vinegar has been the accepted treatment among lifeguards, emergency workers and beach-goers in Hawaii for both Portuguese man-of-war and box jellyfish stings.

In theory, the papain contained in meat tenderizer hydrolyzes the protein components of box jellyfish venom, and therefore, lessens the severity of the sting. In a bee venom study, however, applying Aldolph's meat tenderizer either topically or injecting it beneath the skin on mice with bee stings did not reduce the size of the lesion. Only when papain and bee venom were mixed in a syringe first, and then injected into the mice, was there inhibition of lesion formation.[8]

Because human skin consists of proteins, it was conceivable that applying a protelytic enzyme to skin might cause further injury to a sting victim. The data did not support this theory, perhaps due to the small amount of papain (less than 1 percent) found in Aldolph's meat tenderizer.

One study testing the effects of substances on live, unfired *Chironex fleckeri* nematocysts, found that freshly collected human urine caused massive discharge after a 1 to 2 minute delay.[7] This treatment, therefore, is not recommended for stings from the related *Carybdea alata*.

Based on the results of this study, the authors recommend the following treatment, in this order, for *Carybdea alata* stings:

1. Liberally spray or pour vinegar on the sting area to inactivate nematocysts.
2. Flush any clinging tentacles away with either fresh or salt water.
3. Apply either hot or cold packs, or take hot or cold showers (whichever makes the victim feel better) to ease pain.
4. Severe toxic reactions require analgesics and may improve with antihistamines and epinephrine.

Acknowledgements

The authors thank Honolulu lifeguard Landy Blair for his contributions to this study and for his service to the public. His conscientious work in Waikiki helps beachgoers both avoid and cope with the pain of Hawaii's box jellyfish stings.

Authors

**Craig S. Thomas, M.D.*
President, Hawaii Emergency Physicians Associated, Inc. (HEPA)
Clinical Faculty Member, Department of Family Practice,
John A. Burns School of Medicine, University of Hawaii,
***Susan A. Scott, R.N., B.A.*
Marine Science Columnist
Honolulu Star-Bulletin
****Daniel J. Galanis, Ph.D*
Epidemiologist, Injury Prevention and Control Program
Hawaii Department of Health
*****Ralph S. Goto, B.A.*
Ocean Safety Administrator, Department of Emergency Services
City and County of Honolulu

References

1. Personal communication, January, 2001, Jamie Seymour, PhD, Senior Lecturer, Department of Zoology and Tropical Ecology, James Cook University, Cairns Campus.
2. Thomas, Craig S. et al. 2001. "Box jellyfish (*Carybdea alata*) in Waikiki: Their influx cycle plus the analgesic effect of hot and cold packs on their stings to swimmers at the beach: A randomized, placebo-controlled, clinical trial." *Hawaii Medical Journal* 60, (April):100-107.
3. Lotan, Amit et al. 1996. "Toxin Compartmentation and Delivery in the Cnidaria: The Nematocyst's Tubule as a Multiheaded Poisonous Arrow." *The Journal of Experimental Zoology* 275: (August) 444-451.
4. Kelly, A.M. 1998. "Does the clinically significant difference in visual analog scale pain scores vary with gender, age, or cause of pain?" *Academy of Emergency Medicine* 5 (Nov): 1086-90.
5. Todd, Knox H. et al. 1996. "Clinical significance of reported changes in pain severity." *Annals of Emergency Medicine* 27 (April): 485-89.
6. Arnold, Harry L. 1971. "Portuguese Man-of-War ("Bluebottle") Stings: Treatment with Papain." *Straub Clinic Proceedings* 37, (Jan-Mar):30-33.
7. Hartwick, Robert et al. 1980. "Disarming the Box Jellyfish." *The Medical Journal of Australia* 1 (January):15-20.
8. Agostinucci, William et al. 1981. "Effect of Papain on Bee Venom Toxicity." *Toxicon* 19, no.6, 851-855. Hartwick, Robert et al. 1980.



Aloha Laboratories, Inc.
...When results count

CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

David M. Amberger, M.D.
Laboratory Directory

Phone: (808) 842-6600
Fax: (808) 848-0663
E-Mail: results@alohalabs.com
http://www.alohalabs.com

Medical School Hotline

The Role Of Accreditation in Medical Education

T. Samuel Shomaker, MD, JD
Vice Dean for Academic Affairs
John A. Burns School of Medicine

The John A. Burns School of Medicine of the University of Hawaii is preparing for reaccreditation, a process that the school must undergo at least every seven years. The reaccreditation process is a major institutional commitment that requires thousands of hours of preparation and extensive documentation. Contemplating the magnitude of the investment required to negotiate successfully the accreditation process, one might ask, "What is the intrinsic value of accreditation" and "What role does it play in medical education?" Accreditation is mandatory for the 125 medical schools chartered in the United States, but not required for the operation of foreign based schools. In fact, the Kigezi International School of Medicine of Uganda and the Ross University School of Medicine in Dominica recently sought to establish branch campuses in the United States. Neither of these medical schools is accredited. Ross University recently abandoned plans to open a new campus in Casper, Wyoming, intended to enroll somewhere between six hundred and a thousand students annually. Such an influx of students, associated faculty, and staff required to educate them would have provided a significant economic boon to the community of Casper, Wyoming, but what is problematic about the establishment of such an unaccredited medical school is that in order to practice medicine in the United States, individuals must qualify and pass a series of licensing examinations administered by the National Board of Medical Examiners. To qualify, one must have graduated from a U.S. accredited school of medicine or be certified by the Educational Commission for Foreign Medical Graduates.

There are a number of reasons why accreditation is of importance. First, the quality of foreign medical schools is highly variable. This is evidenced by the fact that half of the graduates of foreign schools seeking licensure in the United States fail to pass the licensing examinations. In contrast, less than 5% of graduates of U.S. medical schools fail to pass these examinations. Thus, accreditation promotes a consistent standard of quality across the spectrum of U.S. medical education ensuring that the vast majority of physicians produced by the U.S. system are competent.

Second, requiring U.S. based medical schools to obtain accreditation has the effect of placing rational limits on the number of physicians in practice in the United States. Allowing unaccredited medical schools to open in the United States could potentially flood the physician marketplace with new graduates seeking to establish themselves in practice, thus driving the rapidly escalating cost of healthcare even more quickly. For example, if even half of the 1,000 students a year Ross intended to enroll had passed the licensure examination, the "successful" class size of 500 would far exceed the size of even the largest U.S. medical school.

If accreditation is in fact desirable, what does it consist of and what role does it play in the healthcare system of our state and nation? The history of accreditation provides some instructive lessons for today's situation. In the years prior to 1900 there were hundreds of medical schools in operation in the United States. Many were small diploma mills that guaranteed a degree to any individual who could pay the money required for tuition. A healthcare system relying on this type of medical education, with no external standards available to insure quality, resulted in medical care that was highly variable, and on the whole, of dubious quality. Around the turn of the century both the American Medical Association and the Association of American Medical Colleges began reviewing medical schools to examine the quality of the medical education. In fact, by 1910, the American Medical Association's Council on Medical Association issued a publication, "The Essentials of an Acceptable Medical College", which listed the suggested standards for medical schools. These included a curriculum of four years duration with two years of basic science instruction and two years of clinical work, supervision of the school by a dean, a required minimum core faculty of graduates from recognized medical colleges with ability as teachers and researchers and adequate facilities for instruction. The existence of standards of this type helped to bring about a consolidation of the number of medical schools in the United States since many of the schools of questionable quality and intent were closed. Those that remained improved their educational programs.

In 1942, the AMA and the AAMC established the Liaison Committee on Medical Education (LCME) aimed at improving medical education through the establishment of standards. In the early 1980s the LCME became the national authority for the accreditation of medical schools, as recognized by the Council on Post Secondary Accreditation and the U.S. Department of Education. This recognition led to the addition of more accreditation standards in the '80s. Through the '90s, additional standards were added in response to national calls for reform in medical education and, even today, the LCME is actively refining and adding to the accreditation standards.

The accreditation process consists of three parts. The first is the compilation of a large amount of standardized factual data on all facets of medical school operation. This is referred to as the educational database, that forms the basis of the report. The database is designed to give the LCME a comprehensive picture of the state of affairs existing at each medical school at the time of accreditation. In the second part, a medical school conducts an institutional self-study, an analysis of the school's strengths, weaknesses and opportunities for improvement. The self-study is designed so that a large number of faculty and students participate in the work of analysis.

The third component of the accreditation process is a site visit by a team of medical school faculty from across the United States. These individuals are dispatched to the school undergoing accreditation for a five-day visit with the purpose of clarifying questions raised by the materials submitted by the school. The site visit team meets with a wide variety of individuals at the host institution, including administrators, faculty, students and the dean. During the site visit, the team writes a report that focuses on the accreditation standards and the school's compliance with them. The team also prepares a list of strengths and weaknesses of the medical school, which are shared with the dean and the University president at an exit interview.

The site visit team is a recommending body and takes no formal action on accreditation. The LCME reviews the report of the site visit team and makes an accreditation decision. The decision can range from full and unconditional accreditation for seven years to probation for serious violations of the accreditation standards.

The accreditation standards consist of nearly 156 separate requirements.[5] Of these, approximately 50 apply to teaching, learning and evaluation, i.e. the educational process. A recent initiative of the Association of American Medical Colleges called the Medical Education Standards and Assessment Project examined a number of salient issues in the accreditation process, including the meaning and application of medical accreditation standards, the importance and validity of medical accreditation standards and the influence of accreditation on educational change in U.S. medical schools.

Accreditation requires that medical schools specify their educational objectives, develop resources and programs to accomplish those objectives and track whether those objectives are being achieved through the implementation of evaluation systems. Accreditation is a quality assurance mechanism for medical education in the United States. It requires medical schools to undertake periodic external and internal self evaluations, a process that spurs continual adaptation and evolution on behalf of those institutions. Several reports have concluded that accreditation has had a positive effect on the education of physicians in the United States.[6,7] The LCME claims that its accreditation standards encourages educational reform, fosters the adoption of pedagogical methods more likely to cultivate habits of self assessment and life long learning, creates greater coherence of instruction across the basic and clinical science years and leads to stronger institutional oversight and accountability for the curriculum.[8]

In conclusion, the process of accreditation of medical schools in the United States has led to an educational system for physicians without peer in the world. This claim is substantiated by hard evidence; 97% of students admitted to United States medical schools subsequently graduate, 95% of graduates are accepted into residency programs, 95% of residents complete their programs and 94% of students and residency graduates pass licensing exams on the first try.[2] Although the accreditation process is complex, burdensome, resource intensive and time consuming, it does appear to be fostering high quality medical education. For those spending many hours preparing for JABSOM's upcoming reaccreditation, it is of comfort to know that the process has value both as an internal quality control mechanism and an external endorsement of the quality of the education provided. Thus, continuation as a fully accredited medical school is an important priority worthy of the efforts expended.

References

1. King SR. Foreign medical school has hopes of hanging its shingle on U.S. soil. New York Times, June 30, 1999.
2. Kassebaum DG, Cohen JJ. Non-accredited medical education in the United States. NEJM 2000; 342:1602-06.
3. King LS. The Flexner Report of 1910. JAMA 1984; 251:1079-86.
4. Report of the Council on Medical Education: The essentials of an acceptable medical college. JAMA 1910; 54:1974-75.
5. Kassebaum DG, Eaglen RH, Cutler ER. The meaning and application of medical accreditation standards. Acad Med. 1997; 72:807-18.
6. Commission on Higher Education. Framework for outcomes assessment. Philadelphia: Middle States Association of Colleges and Schools, 1996.
7. Gelmon SB, O'Neil EH, Kimmey JR. Task Force on Accreditation of Health Professions Education. Strategies for change and improvement: the report of the Task Force on Accreditation of Health Professions Education. San Francisco: Center for Health Professions, June 1999.
8. Kassebaum,DG, Cutler ER, Eaglen RH. The influence of accreditation on educational change in U.S. medical schools. Acad Med. 1997; 72:1127-33.

"Commentary," Continued from p. 202

situation. If the nurse responds in the manner as hoped, the desired outcome has been achieved. However, if the nurse doesn't recognize the serious nature of the comment, then the ability to "save face" is achieveable by saying "only joking." The skill for nurses is in learning to listen beyond the laughter, whether the person addressing them is a peer, patient, family member, or doctor.

Physiological effect: In additon to the functions of humor, the physiological effect of humor is identified as a benefit. Most nurses are able to describe at least one negative physiological effect of stress: muscle tension, cold hands, headaches, gastrointestinal distubances, and many more. While researchers have spent years identifying the negative effects of stess on body systems, they are now looking at the therapeutic effects of humor and laughter on the human body. These include decreased muscle tension, deeper respirations, and positive increases in the immune system.

As nurses practice to improve their abilities to use and appreciate humor, they also enhance their skill. "Humor appreciation involves responding to humor produced by others or being a good audience. On the other hand, humor production involves thinking of things on your own to amuse yourself or others," says Michelle Newman, PhD. When using humor as a coping mechanism, one cannot always count on being able to find an external focus of amusement. "Of the two, humor production is the more portable skill." says Newman and adds, "From the standpoint of coping, it seems to me to be less important whether you can amuse other people than whether you can amuse yourself." The implication for nurses is that while they may gain benefits from humor when enjoying it passively, there are even more benefits in being active participants by producing a humorous state of mind for themselves.

Because everyone's sense of humor is unique, the techniques used to create humor must be highly individualized. The methods need not be flamboyant to be effective. For example, some nurses might be comfortable wearing a small decorative pin with an amusing picture or statement on it, particularly at seasonal times. Colorful clothing with festive accents might be an option if dress codes do not forbid. Some nurses are subtle, wearing Looney Tunes socks or Mickey Mouse jewelry while others walk the halls wearing a red sponge nose or carrying a rubber chicken! Posting cartoons and illustrations can brighten up any nursing unit. Sharing jokes, stories, or embarrassing moments are other ways to generate laughter. Humor baskets, carts and humor rooms are means of creating a more humorous environment.

Many nurses may refrain from using the skill of humor on the grounds that it is not "professional." Humor is not the equivalent of "goofing off." Indeed, it is important for nurses to maintain high standards and high expectations on their units and to take their work seriously. It is also important for nurses to be able to take themselves lightly. Sad is the nurse who cannot learn to separate the two— and that is no joke.

Cancer Research Center Hotline

Cancer Research Center of Hawaii: 30 Years of Progress in Cancer Research

Sharon Shigemasa, R.N., M.S.,
Public Information Officer,
and
Carl-Wilhelm Vogel, M.D., Ph.D.,
Director, Cancer Research Center of Hawaii

The year 2001 marks an important milestone in the history of the University of Hawaii's Cancer Research Center of Hawaii (CRCH). It was 30 years ago that the CRCH was first conceived by research-oriented scientists from among the University's biomedical academic community who were interested in unraveling the mysteries of cancer. These scientists, under the leadership of the late Dr. Frederick Greenwood, recognized the unique opportunities available to study cancer in Hawaii's multiethnic populations. Through an organized effort, they convinced the UH Board of Regents in 1971 to authorize the establishment of the CRCH, initially as a research component of the Pacific Biomedical Research Center. Not quite coincidentally, 1971 was also the year that then President Richard Nixon signed into law the National Cancer Act, which would fuel the momentum for and funnel millions of dollars to cancer research in the United States.

Dr. Richard K.C. Lee of the UH School of Public Health was named acting director of the CRCH in 1972, while programmatic development of the Center continued with the support of a two-year Exploratory Studies Grant from the National Cancer Institute (NCI). In 1974 Dr. Lawrence Piette, a biochemist, was named the first director of the Cancer Research Center, and the CRCH received the first of three consecutive Cancer Center Support Grants from the NCI. The Center also received a construction grant from the NCI which enabled the planning and construction of the current Cancer Research Center building at 1236 Lauhala Street on the grounds of the Queen's Medical Center, completed in 1979. In 1981 the UH Board of Regents established the Cancer Research Center as a free-standing, permanent, and independent organized research unit of the University to facilitate its mission of understanding cancer and reducing its impact on the people of Hawaii.

Despite successful early development, the Center was unable to sustain further growth. Dr. Piette left the University in 1985, and the Center lost its Cancer Center Support Grant. At the time, the CRCH lacked sufficient appropriations and a critical mass of multidisciplinary research faculty. The situation led to an extensive evaluation of the commitment of the University to cancer research, and resulted in renewed and increased support of the Center in terms of funds and positions from the University under then UH president Dr. Albert Simone.

An international search was initiated for a new director which resulted in the appointment of Dr. Brian Issell in 1988. Under his leadership, the CRCH made great strides in refocusing its research direction, attracted new research faculty, and succeeded in winning an increasing number of peer-reviewed contracts and grants. During this time, the Natural Products Program, which identifies new anti-cancer agents from marine microorganisms and local plants, was established as well as the first endowed chair at the Center.

During Dr. Issell's tenure, an NCI planning grant was awarded to the Cancer Research Center in 1992 to help it get back on course to achieve its redesignation as an NCI cancer center. Finally, in 1996, the Cancer Research Center succeeded in its bid to once again become an NCI-designated clinical cancer center with the award of a new Cancer Center Support Grant. The CRCH has capitalized on its NCI designation and has continued to grow and prosper in its cancer research activities. Dr. Issell announced his resignation as Center director in 1996, and after an international search, Dr. Carl-Wilhelm Vogel assumed the helm of the CRCH in 1999. Under the new leadership of Dr. Vogel, the Cancer Research Center was rated highly in its NCI review and was awarded a five year extension of its Cancer Center Support Grant in 2000, totaling in excess of $10 million.

In 1989 the total budget of the Cancer Research Center was $4 million. Today the Center is one of 60 NCI-designated cancer centers in the U.S. Through the successful efforts of its research faculty and staff, the CRCH currently attracts approximately $23 million per year in extramural funds, and an increasing amount of philanthropic donations for a total budget of well over $25 million, of which approximately two million dollars per year are provided by the state for operating costs. This amounts to a 10:1 ratio in extramural funding versus state support, making the Cancer Research Center the most successful and cost-effective UH research institute.

In the past 30 years, the CRCH has achieved a number of important accomplishments. The Epidemiology Section of the Cancer Etiology Program has long served as the cornerstone in the development of the Cancer Research Center. Today its faculty members are recognized worldwide for excellence and their groundbreaking research in a number of key areas.

- First to recognize and exploit the value in studying the effect of migration on cancer risk.
- Among the first to emphasize the role of diet in cancer incidence and mortality.
- Identified diet as one of the key environmental factors that alters risk in succeeding generations.
- On the cutting edge of research attempting to unravel the multifactorial relationships between diet, genetics, and various susceptibility factors.
- First to show that a diet rich in fruit and vegetables was more important in reducing lung cancer risk than individual components.
- First to identify that infection of the stomach by the bacterium Helicobacter pylori is an important risk factor for stomach cancer.

Fundamental laboratory research of the Molecular Carcinogenesis Section of the Cancer Etiology Program has contributed to our understanding of cancer biology.

- First to demonstrate that key dietary molecules such as Vitamin A and β-carotene could enhance cell communication and potentially reduce cancer risk.
- Identified key biochemical changes that occur in cells such as

Continues on p. 215

News and Notes Henry N. Yokoyama MD

Potpourri...

"When I press my forehead with my finger, it really hurts." A patient complained to his doctor..."And when I do the same to my cheek it's also painful. Even if I press my stomach, I suffer...What can it be?"
Stumped, the physician sent the patient to a specialist...
The man returned to his doctor the following week. "What did the specialist say?" the doctor asked.
"I have a broken finger."

— — — — — — — —

Laughter the Best Medicine...

A couple of anthropologists traveled to Indonesia, each going to a different island to study the local culture. Soon, one paddled over to see how his colleagues were doing.
"I've made a discovery about the language," the scientist said. "Watch!" He pointed his finger at a palm tree and the locals said, "Umbalogong!" Then he pointed at a rock and they all said "Umbalogong!"
"You see?" the anthropologist said, "They use the same word for rock and palm tree. Isn't that amazing?"
"You know what's more amazing?" the other scientist replied, "On the island where I work, the same word means index finger!"

— — — — — — — —

The old preacher was dying, so he sent for a lawyer and an IRS agent from his congregation. The lawyer and the agent were puzzled since neither had been a close friend of the preacher. As the two men entered the dying man's room the preacher motioned for them to sit on either side of his bed. He grasped their hands, sighed contentedly and stared at the ceiling.
"Why did you ask the two of us to come to your deathbed?"
"Jesus died between two thieves," the preacher answered, "And that is how I want to go."

— — — — — — — —

Woman to doctor: "I've been feeling absolutely marvelous with those frolic acid tabs you prescribed."

— — — — — — — —

During a visit to the lady's room, my friend Addy heard the woman in the next stall suddenly ask: "So how are you?" Startled, Addy replied tentatively, "Fine." The woman continued, "So what's new?" Still confused, Addy said, "Not much. What's new with you?" The woman then snapped, "Do you mind? I'm on the phone."

— — — — — — — —

Potpourri...

Nursing Time: It was another busy day in my practice, when coming out of my exam room, I overhead a patient talking to my office nurse. She obviously knew my nurse from high school. She was asking Nurse Gaye if she had gone to nursing school after graduation...
Gaye answered , "Yes, of course I did and I have been nursing since 1976."
At that, a patient from the waiting room piped up: "Holy smoke, how old is your kid?"

Dr. Linda Ducholke

— — — — — — — —

A Russian cosmonaut crash-landed in the Australian outback and ended up in a small hospital. Regaining consciousness, he saw a nurse approaching his bed. Knowing that he must be in pretty bad shape, he asked. "Did I come here to die today? "No", the nurse replied, "You came here yesterday."

— — — — — — — —

"Court Jesters" by Peter McDonald, Q.C.

In 1994, a 25 year old chap named Paul Kimbolt was charged with sexual assault in Ogden, Utah. The culprit escaped but was apprehended easily because he'd left the victim's house minus his pants which contained his wallet and all sort of identification...

— — — — — — — —

Jim Baley was a burglar who no one could ever accuse of being bright...One night in 1968, accompanied as usual by his dog, Turny, he knocked off a Detroit liquor store and lugged the loot home as fast as he could, leaving his Turny behind in the store. When the police officer went to the scene of the crime he shouted to the dog, "Home, boy." The policeman followed the pooch and promptly arrested his master...

Court Jesters...

In Vancouver in 1984, a young bank teller gave the police a vivid description of a real pro at work. She said the man stood in line, patiently waiting his turn, and as soon as he reached her wicket, he growled, "This is a hold up. Give me all your money."
She was puzzled, "Where's your gun" she asked. "My friend has it and he'll use it," What's he wearing?" " A brown jacket."
The woman scanned the line, then said, "He's gone."
"Well give me the money anyway," the flustered fellow demanded...
"Wait right here," said the teller, "I have to ask my boss."
She vanished into an office, then seconds later returned and told the robber, "You can only have $150.00"
"That'll do," he said quickly and grabbed the meager amount offered and scooted toward the door...He was grabbed by two policemen who escorted him to headquarters...
"New at this?" one of the officers asked, "Yes," the man sighed, "It's my first time."

— — — — — — — —

Walking into the local Chamber of Commerce, the stranger looked desperate...He approached the guy at the counter and asked, "Is there a criminal attorney in town?
The fellow behind the counter replied, "Yes, but we can't prove it yet!"

— — — — — — — —

As a dental hygienist, I had a family come in one day for cleaning...By the time I was ready for the father, he informed me I had a lot to live up to....His six year old daughter kept commenting "that's a very smart lady cleaning our teeth today." The father finally asked her why she kept going on about my intelligence...
The little girl replied, "I heard people call her "The Dental High Genius."

— — — — — — — —

When a woman in my office became engaged, a colleague offered her some advice..."The first ten years are the hardest," she said..."How long have you've been married?" I asked..."Ten years," she replied...

Medical Tid Bits

Dr. Moti Kashyap of the Long Beach Health care system and colleagues put 800 adults on the following regimen for a year: I) Niacin (extended release form) b) Vitamin B and c) Lovastatin
Results: 41% increase of HDL, 45% decrease of LDL; 42% decrease in triglycerides...

— — — — — — — —

Kids' Antibiotic Use Declines:
A survey of MD's conducted by CDC (Centers for Disease Control & Prevention) shows that the rate of antibiotic prescriptions written by office-based MD's for children under age 15 with respiratory diseases was significantly lower at the end of '97/98...

— — — — — — — —

Sunglasses:
Sunglasses despite the different shades on the market still fail to fully block the two main types of ultraviolet radiation (A & B)...which are linked to everything from wrinkles to sun burn and skin cancer...Water skiers or snow skiers develop photo keratosis...Studies also link UV radiation to cataracts and to macular degeneration...Sunglasses should have official decals indicating that the lens absorbs 99% to 100% of UVA and UVB rays. For a little extra margin of safety, choose lenses that are polarized... (Ian K. Smith, M.D.)

— — — — — — — —

Folic acid:
Two years after folic acid was added to grain products in the U.S., certain birth defects of the brain and spine are down 19%...

— — — — — — — —

Lutein:
A study of 480 healthy men and women with high levels of lutein (a golden hued antioxidant) found in dark green leafy vegetables are less likely to trigger heart attacks, strokes, and blindness....

— — — — — — — —

Coffee Intake
A 10-year study of 61,000 women by Swedish researchers concluded that coffee does not protect against colorectal cancer.

— — — — — — — —

ADHD:
ADHD is usually associated with hyperactive little boys, but these days, millions of adults are also being treated for Attention Deficit/Hyperactive Disorder; and 50% to 60% are adult women...The leading theory is that women now seeking treatment have actually had ADHD since childhood, but went unnoticed.

WE COLLECT PAST DUE ACCOUNTS

Only 25%* fee for Health Care Firms!

Why give up more!

Wood & Tait

HI Collection & Detective Agency
Staff on Kauai, Oahu, Maui, & Hawaii
http://www.woodtait.com

739-0433

jwood@woodtait.com

*Applies to accounts assigned during this promotion; no restrictions as to dollar size or age of accounts. Fee will increase to 50% if litigation or forwarding required; you will receive a contract.

"Cancer Research Center Hotline," continued from p. 213

protein phosphorylation leading to cellular proliferation that may be the key to the abnormal functioning of cancer cells.

• First to identify a key dietary component of Vitamin E, γ-tocopherol, as a potential cancer preventive agent.

The Natural Products Program has developed new cancer-fighting drugs from marine organisms.

• Cryptophycin was identified in cyanobacteria and is currently undergoing phase II clinical trials for the treatment of cancer.

• The laulimalides (found in a tropical marine sponge), another class of compounds whose anti-tumor activity was identified by CRCH scientists, is currently undergoing pre-clinical testing.

The Prevention and Control Program has focused on reducing the incidence and severity of cancer and spans the continuum from primary prevention and early detection to treatment and long-term survivorship. The program has been instrumental in leading initiatives to reduce cancer-causing behaviors in Hawaii's multiethnic populations including smoking, underage drinking, and excessive sun exposure. This program has also been instrumental in conducting clinical trials seeking to reduce cancer mortality and morbidity. These trials include new treatment studies as well as interventions to improve psychosocial well-being. Presently, through its Clinical Trials Unit, the program makes approximately 150 clinical trials from NCI-supported clinical research groups available to cancer patients in Hawaii in cooperation with community oncologists and hospitals. Researchers in this program also conduct prevention intervention trials to test the effects of dietary change on cancer incidence as an instrumental component in translating fundamental knowledge generated by CRCH research into practical use.

In recognizing the growing importance and growth of both, the study of risk behavior in healthy populations as it relates to the incidence of cancer as well as the need for more patient-oriented clinical research, the Prevention and Control Program was dissolved this July with the creation of two new programs, the Social and Behavioral Sciences Program and the Clinical Sciences Program at the CRCH.

In its early years the CRCH also pioneered the provision of state-of-the-art diagnostic and treatment equipment when the technology was not available through our community medical centers. Examples of these include the first cell separator or pheresis machine and the first radiation dosimetry machine. The cell separator provided blood support to patients, who were rendered vulnerable to life-threatening infection and bleeding as a result of their treatment with chemotherapy and radiation. The radiation dosimetry machine provided greater accuracy in measuring a patient's dosage and pinpointing the perimeters of the site to be radiated.

Since 1982 the Cancer Information Service (CIS) of Hawaii, which is a part of the Clinical Sciences Program, has made outstanding contributions in helping cancer patients and their families and health care professionals by providing general cancer and disease- and stage-specific information, including available treatment options. Up through mid-October 1999, the CIS of Hawaii provided this information through a locally available phone service, which is now provided to Hawaii residents by information specialists located

Continues on p. 216

"Cancer Research Center Hotline," continued from p. 215

at a CIS call center in Seattle. However, the CIS is now focusing its efforts in cancer outreach by building and supporting partnerships with community organizations whose constituencies are comprised of minorities and hard to reach populations.

The Cancer Center also operates the Hawaii Tumor Registry which maintains a database on virtually all cases of cancer diagnosed in the State of Hawaii. It provides complete cancer reporting for the entire state and serves as an important resource for nearly all epidemiological cancer research and cancer control studies at the Center. It is in its 41st year of operation and represents one of the most successful tumor registries in the nation. Support for the Hawaii Tumor Registry is primarily derived from the NCI through its Surveillance, Epidemiology, and End Results (SEER) program with additional funding from the State of Hawaii Department of Health.

On September 22, 2001, the Center will celebrate its 30th anniversary with a signature event called "The Mauka Makai...Voyage of Discovery" on the parking lot of the Center's neighbor, the Board of Water Supply. It will be a friendraiser and fundraiser for the Center which is planned to develop into an annual event. At "The Mauka Makai" event, Ms. Loyal Garner will be honored with the first Mauka Makai Award for serving as a spokesperson on cancer and for her courage in sharing her personal experiences as a cancer survivor.

At the time of celebrating past accomplishments, it is also important to look to the future. The Cancer Center faces significant challenges and opportunities. As a result of its growing research programs, the Cancer Center building on Lauhala Street has become too small to house all investigators. The Center is currently going through a phase of establishing satellite facilities on the UH Manoa campus and elsewhere in Honolulu. However, the vision is for a new Cancer Center building, which will reunite all cancer research activities under one roof and will provide the necessary space to meet the needs of the growing research programs. Furthermore, to achieve designation from the NCI as a "comprehensive cancer center", the Cancer Research Center has been charged with developing a state-of-the-art outpatient facility which will significantly enhance the clinical research opportunities of its faculty. Such a facility will simultaneously allow us to make innovative cancer treatments available in Hawaii and will result in better and coordinated care for Hawaii's cancer patients. Such an outpatient component of the Cancer Center would ideally be operated in partnership with community oncologists and hospitals.

For more information on the Cancer Research Center of Hawaii and "The Mauka Makai ...Voyage of Discovery", please visit the Cancer Center's website at www.crch.org.



HAWAII POISON CENTER

OAHU: 941-4411

NEIGHBOR ISLANDS TOLL-FREE:

1-800-362-3585

Free Hotline 24 Hours a Day.

POISON CENTER TIPS

- Keep the number of the Hawaii Poison Center on or near your telephone.
- If you suspect a poisoning, do not wait for signs and symptoms to develop. Call the Hawaii Poison Center immediately.
- Always keep Ipecac Syrup in your home. (This is used to make a person vomit in certain types of poisoning.) **Do not use Ipecac Syrup unless advised by the Hawaii Poison Center.**
- Store all medicines, chemicals, and household products out of reach and out of sight, preferably locked up.
- A good rule to teach children is to "always ask first" before eating or drinking anything—don't touch, don't smell, don't taste.

Donate to help us save lives.

Mail checks, payable to:

Hawaii Poison Center

1319 Punahou Street, Honolulu, HI 96826

ARRIVAL NOTICE

Steinway Pianos

Great New Selection Of Steinway Grands & Uprights! Including Rare Exotic Woods, Designer Styles and Limited Editions.

- Largest Piano Inventory In Hawaii ~ New & Used
- Guaranteed Lowest Prices



Open 7 Days A Week

SANDERS PIANO

1500 S.King Street
946~6500
Neighbor Islands Toll Free 1-800-704-0441



There is a time in life when we start to understand ***what really matters.***

Helping people with terminal illness, their families and loved ones live every day at home.

924-9255

www.hospicehawaii.org

HOSPICE HAWAII

Classified Notices

To place a classified notice:

HMA members.–Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.

Nonmembers.–Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Office Space

MAUI– Medical office space, turnkey, central location, plenty of parking, 600-2500 square feet. Call Lorne Direnfeld, M.D. (808) 877-5811.

Physician Wanted

KAUAI– Seeking a BC/BE primary care internist; Interests in rheumatology, infectious diseases and geriatrics are welcome. Proficiency in treadmill stress testing desired. Kauai Medical Clinic is a 65-physician multispecialty group affiliated with Wilcox Health System's 181-bed community hospital. This outstanding opportunity offers excellent quality of life in a safe, beautiful, family oriented rural community. Competitive salary, benefits and relocation package. Send/fax CV to: M. Keyes-Saiki, Kauai Medical Clinic, 3-3420 Kuhio Highway, Suite B, Lihue, HI, 96766-1098. Fax(808)246-1625. E-mail: mkeyes-saiki@wilcoxhealth.org.

Assistant Professor

ASSISTANT PROFESSOR– Position Nos.88885T, 85755T and 85754T, M3, Geriatric Medicine Program, John A. Burns School of Medicine, F/T, to begin approx. August/September for one year, non-tenurable. **DUTIES:** Incorporate geriatric teaching in medical school curriculum, all residency programs, and continuing medical education. Curriculum development, clinical and didactic teaching, clinical teaching services research publications and community service commensurate with academic rank. **MQS:** M.D. or D.O. degree; board eligible or board certified, fellowship in Geriatric Medicine, Certified (or eligible for certification) in Geriatric Medicine, eligible for Hawaii license and demonstrated ability in teaching. **DQS Min. Annual Sal** $78,924. Send updated C.V., bibliography, and 5 names of reference to: Patricia Lanoie blanchette, M.D., MPH, Geriatric Medicine Program, John A. Burns School of Medicine, University of Hawaii, 347 No. Kuakini St., HPM-9, Honolulu, HI 96817. Closing Date: Aug. 13, 2001. An EEO/AA Institution.

The Weathervane Russell T. Stodd MD

Shooting Up Once Is Alright - Twice Is Too Much - Three Is Not Enough.

A not rare event occurred recently involving a Hawaii physician with an addiction problem. A fellow physician learned of his colleague's disorder and was torn with whether to "rat" on his friend, or keep quiet about the whole thing, since the doctor seemed to have no difficulty with his medical practice. Fortunately, in our state we have an active *physician's health committee* in the Hawaii Medical Association which serves to confront the addicted physician. If caught in time, the committee can deter his prosecution, and steer him on a path for survival. It can save his professional career and perhaps his life. It isn't ratting on a friend when you help him into a rehab program. Furthermore, if a fellow physician is aware of an impaired doctor and fails to seek help for the errant physician, both are in a vulnerable liability position.

It Takes A Lot Of Suits To Keep A Lawyer Well Dressed.

One of the first cases involving a lawsuit against an HMO (cardiology group) occurred in Texas when a 46 year old woman died of congestive heart failure three days after a physician had prescribed a drug for symptoms of heart valve disease. When the patient called his office because her symptoms were worsening, a nurse advised her to double the dose of the medication. The family brought a lawsuit claiming that the patient was unable to get an appointment because the HMO referral from her primary care physician had expired. It was alleged that the HMO withheld 10% of its payments to providers until the end of the year as an incentive to reduce costs. Ultimately, the suit was settled before trial in order to avoid a jury verdict. The general counsel for the Texas Medical Association believes the HMO liability law is serving its purpose since the cardiology group would have been liable for the total amount without the statute.

Congress In Session - Nothing Ado About Much.

Any type of tort reform is rare from the U.S. Senate. But, this May 9, 2001, the Senate passed the Teacher Liability Protection Act of 2001 which included an amendment shielding teachers from liability for conduct that conforms to laws or school rules. Moreover, it abolishes punitive damages and joint and several liability in actions against teachers. The House of Representatives will act upon parallel legislation shortly. It does not directly impact the adjudication of medical malpractice claims, but any Senate tort reform is a step. This process will probably stay alive until the trial lawyers lobby does their usual number of annihilating any medical malpractice tort reform.

If You Remember The Sixties, You Weren't There. - Part 2

In a May decision, the Supreme Court of the United States unanimously ruled against the Oakland Cooperative in regard to the medical use of marijuana. While the therapeutic issue is one of ongoing debate, the legalities are fairly straightforward. Congress has defined marijuana as a class one drug without any medical use. The question was one of whether the Court would overrule Congress, and by unanimous decision, the Court decided not to do that. If, as proponents claim, there are appropriate medical uses of the drug, presentations should be made to Congress. Scientific research based upon established therapeutic principals, must be presented. Anecdotes and testimonials will not suffice to convince Congress to decriminalize a substance which many still view as the gateway to cocaine and heroin addiction.

Utah Winter Olympic Event - Downhill Polygamy!

In Iron County, Utah, two men pleaded guilty to drilling holes in a woman's skull (with her permission). The District Attorney prosecuted them for practicing medicine without a license. Some *New Age* followers claim the procedure, called "trepanation," promotes higher consciousness and relieves depression. Does this fall under the definition of alternative medical care to be used when St. John's wort fails? Of course, some doubters might assume that the whole crowd is playing with about half a deck.

Survival Of The Effetest.

Pamela Gardiner, deputy inspector general for tax affairs, wanted to learn how IRS employees used their government computers. Over a period of months, her staff evaluated 16,000 workers. The results are amusing, but not very funny. Out of 16,275 hours online, 8,250 (that's over half, friends) were devoted to trading stocks, gambling and downloading erotica. 23% were using their IRS computers to blab in Internet chat rooms, 20% were searching for job opportunities, and 7% went shopping. The report summed up, "the IRS is losing productivity, creating unnecessary demand on its telecommunications system, and could be fostering a hostile work environment by allowing sexually explicit material into the workplace via the Internet." I am shocked! Senate Finance Committee chairman, Charles Grassley (before the switcheroo), was not amused either and said, "some IRS employees are clearly goofing off." These are the same people who are auditing our tax returns, and according to the report, 37% of phone calls are not even answered. Those are the lucky phone calls, because the IG also found that the IRS gave incorrect answers to taxpayers' questions 49% of the time! Flat tax, anyone?

Only In Paradise Does Cancer, Heart Disease, Stroke, et seq, Add 4.17%.

The American Medical News ran a story telling of the only states with a sick tax, Minnesota's 1.5% and West Virginia's 2%, but somehow the writer overlooked Hawaii's 4.17%. A bill offered in the last legislative session would have removed the "disease tax" which is part of the nefarious Hawaii tax code called *general excise tax*. The GET, which allows compounding of virtually all transactions, is so much a part of our porky state government budget, that the politicians just can't find a way to stop penalizing sick people in Hawaii, including those suffering terminal illness. Joe Souki, speaker emeritus, stated that the issue is not dead and can be reconsidered at the next session. May I suggest that you not suspend respiration.

Another Thing Stranger Than Fiction Is Woman.

The Supreme Court of the United States recently ruled 6-3 in favor of 10 women who filed a lawsuit against the Medical University of South Carolina. In 1989 the medical facility established policy whereby it tested pregnant women for drugs without their consent. The fear was that cocaine use among pregnant women was increasing. The policy was run in conjunction with law-enforcement authorities, and users were thereby liable for prosecution. Justice John Paul Stevens, writing for the majority, said the program violated the Fourth Amendment rights against unreasonable searches. Dissenting Justices Rehnquist, Scalia and Thomas said doctors are supposed to have patients' welfare in mind, and if they happen to provide evidence for the police, that "should make no difference." Thank goodness the other 2/3 of the Court disagreed.

The Shape Of Things To Come.

Only in California, the land of almonds, oranges, and other fruits and nuts, comes the latest fad in baby shower parties. The expectant mother, at eight plus months of gestation, strips bare while her friends lay plaster over her anterior torso. After about 10 minutes, the cast of her abdomen and breasts is removed, still thin enough to reveal graphic contours of her stretched full frontal bod. Some mothers save the cast to hang on the wall as a proud memento. Others have turned them into planters, candy bowls, cradles for the newborn, or even center pieces for the dining room table. Some viewers have been shocked at the detail revealed in plaster, while some others don't recognize what it is. Belly casters claim the practice dates back to an ancient African ritual, and was only revived in California in the 1980s. Whatever. The shower practice is now sweeping the nation, and there are websites for do-it-yourself kits. Pregbelly dot orgy?

ADDENDA

- The fire-bellied toad has a heart-shaped pupil.
- Perhaps war is God's way of teaching us geography.
- My parakeet died. We were playing badminton.
- Just remember, if the world didn't suck, we would all fall off.

Aloha and keep the faith —rts■

Contents of this column do not necessarily reflect the opinion or position of the Hawaii Ophthalmological Society. Editorial comment is strictly that of the writer.



Checked your practice lately?

You strive to be the best practitioner you can. You stay current in your field. You spend countless hours checking on the health of your patients.

Who is checking on the health of your practice?

Is your business thriving? Should you understand the cash flow side of your business better than you do?

TeamPraxis manages the business side of medicine. We optimize your:

- ***CPT coding.***
- ***Patient billing and collection.***
- ***A/R management.***
- ***Cash flow.***
- ***Work flow management.***

Give us a call to get a free consultation.

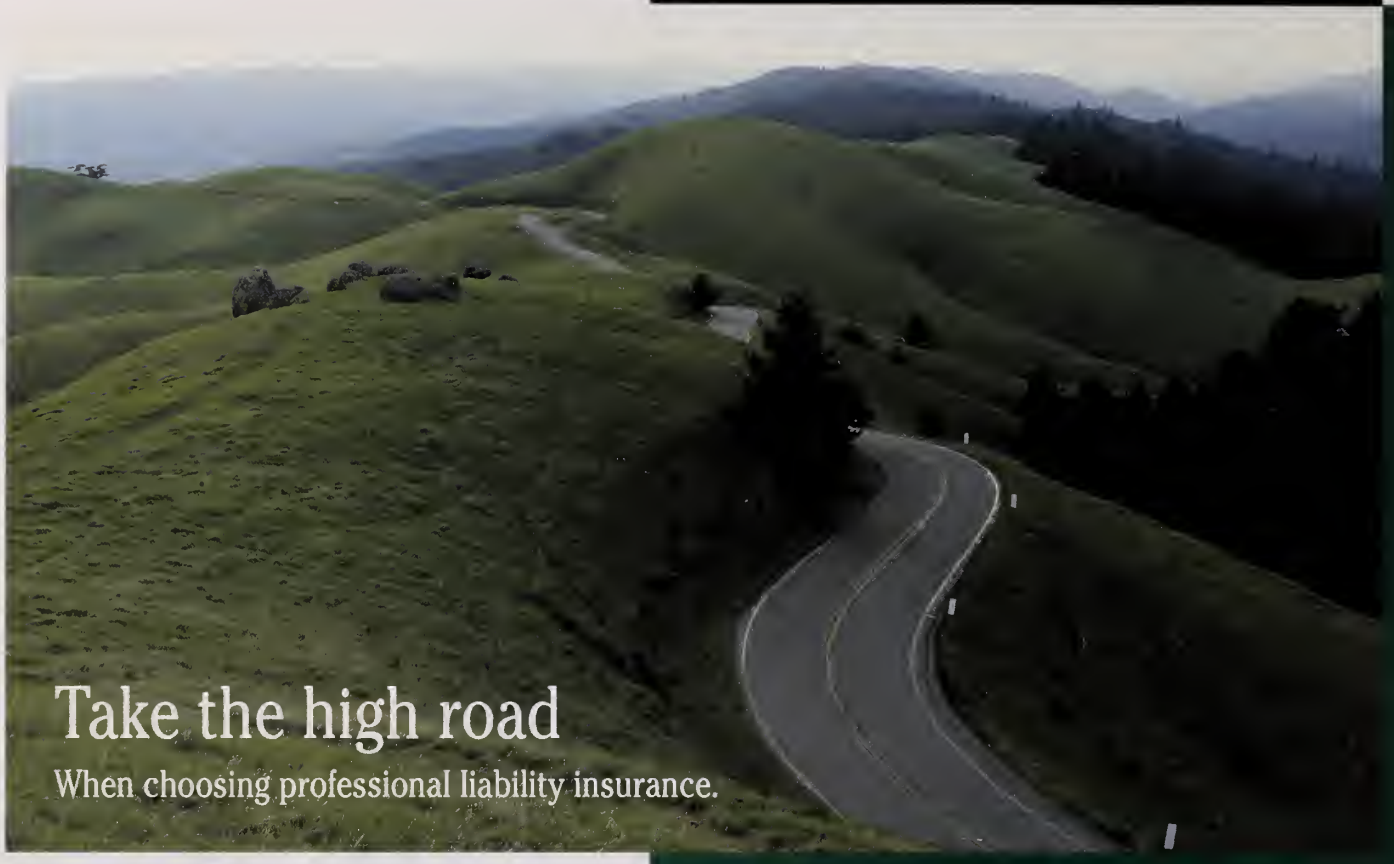
TeamPraxis℠

Your practice management team.

948-9343

Neighbor Islands, call
866-TPRAXIS
(866-877-2947)

www.TeamPraxis.com



NO RATE INCREASE IN 2001

MIEC

Medical Insurance Exchange of California

6250 Claremont Avenue
Oakland, California 94618
800-227-4527
www.miec.com

HAWAII CLAIMS OFFICE:
1360 South Beretania Street,
Honolulu, Hawaii 96814

Rated "A" (Excellent) by A.M. Best

Sponsored by the Hawaii Medical Association

THE SAFEST ROUTE IS
WITH AN EXPERIENCED GUIDE.

In Hawaii, that's MIEC. We are the West's first physician-owned, not-for-profit professional liability insurer. For more than a quarter century, we've protected doctors with financially secure coverage. We're also known for our unsurpassed, consistent track record of returning policyholders, permit. We've \$200 million.

Hawaii medical journal
v. 60
no. 8
August 2001
Received on: 09-19-01
Brown University Library
SCI

insurance is a hip. At MIEC, we take this commitment seriously.

Choose the genuine original, MIEC.

I-ST2
R1
H25x
SCI

HAWAII MEDICAL JOURNAL

September 2001 Volume 60, No. 9 ISSN: 0017-8594



xxxxxxxxxxxxxxxxxxxxxxMIXED ADC 967
Serials Dept
Sciences Library
Box 1
Brown University
Providence, RI 02912-0001

HAWAII MEDICAL ASSOCIATION 1856


1% ONCE A DAY
Noritate
(metronidazole cream) Cream, 1%
PSORCON®e
(diflorasone diacetate cream) 0.05%
(diflorasone diacetate ointment) 0.05%
BENZAMYCIN® Topical Gel
(3% erythromycin, 5% benzoyl peroxide)
Klaron®
(sodium sulfacetamide lotion) 10%
DERMIK
Innovation that makes a world of difference
Our Mission: To become a global leader in providing innovative dermatological products to patients and healthcare providers.
To learn more, call 1.610.454.8110, or visit our site on the World Wide Web at http://www.dermik.com
Platinum Benefactor
Honor Society
Dermik Laboratories supports research in skin care through a grant to the Dermatology Foundation
DERMIK LABORATORIES, INC.
Dedicated to Dermatology™
A RHÔNE-POULENC RORER COMPANY

Straub welcomes these outstanding new physicians

FAMILY MEDICINE



Dr. Marti Taba specializes in the care of all family members. Her special interests include adolescent health, women's health and preventive medicine. Received Doctorate of Medicine from University of Hawaii, John A. Burns School of Medicine. Residency at Riverside Methodist Family Practice Residency Program, Columbus, OH. Member of the American Academy of Family Physicians. Dr. Taba will be seeing patients at the Straub Kailua Family Health Center.

INTERNAL MEDICINE



Dr. Edward Silver is Board Certified in Internal Medicine. Special interests include cardiology, diabetes and hypertension. Received Doctorate of Medicine from University of Tennessee. Residency at Wilford Hall USAF Medical Center, San Antonio, TX. Dr. Silver will be seeing patients at the Straub Pali Momi Clinic.

NEUROSURGERY



Dr. Todd Thompson's special interests include minimally invasive neurosurgery, functional and stereotactic neurosurgery, spine surgery and endoscopic pituitary surgery. Received Doctorate of Medicine from Temple University School of Medicine. Residency at University of Pittsburgh, PA. Fellowship in Gamma Knife Radiosurgery at the University of Pittsburgh, PA.

ORTHOPEDIC SURGERY



Dr. John Wright is Board Certified in Orthopedic Surgery. Special interests include arthroscopy surgery, sports medicine and total joint replacement. Received Doctorate of Medicine from University of Connecticut Medical School. Integrated Surgical Residency at University of Hawaii and Orthopedic Surgery Residency at The Hospital for Special Surgery, New York, NY. Fellowship in total joint arthroplasty at the New England Baptist Hospital, Boston, MA. Sports Medicine and Shoulder Surgery Fellowship at the Steadman Hawkins Clinic, Vail, CO. Assistant team physician for the U.S. ski team and recipient of the 2001 Otto Aufranc Award for outstanding research.

UROLOGY



Dr. David Wei's special interests include urologic oncology and reconstructive urology. Received Doctorate of Medicine from the University of Southern California School of Medicine. Residency at the University of Miami, Jackson Memorial Hospital. Fellowship in Urologic Oncology at the Sloan-Kettering Cancer Center, New York, NY.

Straub

Partners in health

straubhealth.com

24-Hour Appointment Line: 522-4777

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
John Breinich MLS, Satoru Izutsu PhD,
James Lumeng MD, Douglas G. Massey MD,
Myron E. Shirasu MD, Frank L. Tabrah MD,
Alfred D. Morris MD

Journal Staff
Editorial Assistant: Drake Chinen

Officers
President: Philip Hellreich MD
President-Elect: Gerald McKenna MD
Secretary: Calvin Wong MD
Treasurer: Paul DeMare MD
Past President: James Lumeng MD

County Presidents
Hawaii: David Camacho MD
Honolulu: William McKenzie MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Gardner Quarton MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 2001 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 226

The Kulia Program: Psychiatric Rehabilitation in Hawaii
F.M. Baker MD, MPH and Patricia Nakasukasa RN 229

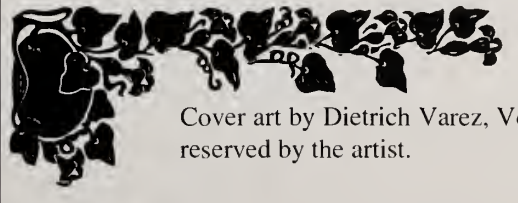
Medical School Hotline
Damon H. Sakai MD and Richard T. Kasuya MD, MSEd. 234

Cancer Research Center Hotline
Marc T. Goodman PhD, MPH 236

News and Notes
Henry N. Yokoyama MD 239

Classified Notices 241

Weathervane
Russell T. Stodd MD 242



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

Ahi

"Ahi" meaning "fire" refers to the speed with which the giant tuna pulls the line over the side of the canoe. The friction causing the line to "smoke".

Editorial

Norman Goldstein MD
Editor, Hawaii Medical Journal

Happy Birthday, Hawaii Medical Journal

This issue marks 60 years of continuous publication of the Journal. Volume 1, No. 1 appeared in September 1941. The Hawaii Medical Association was then the Hawaii Territorial Medical Society, "incorporated in 1856 under the Monarchy."

The first Journal contained the following manuscripts:
Rheumatic Heart Disease in Hawaii - S.E. Doolittle and I.L. Tilden
Specific Therapy of Lobar Pneumonia - M.A. Blackenhorn
The Sulfonamides in Gonorrhea - Lt. Cmdr. F.R. Moore
Dermatologic Lesions vs. Syphilis - H.M. Johnson

Our first two editorials by Harry L. Arnold, Jr. were:
The Bulletin is dead - long live the Journal
The proposed Plantation Health "Cooperative Plan"

The Journal also included "Progress in Internal Medicine", "The Latest Advances in Surgery", "Plantation News", and "Leprosy in Hawaii" by Edwin Chung-Hoon. The first issue cover had a drawing of the Mabel L. Smythe Memorial Building which housed the administrative office of the Territorial Medical Association. The Mabel Smythe Building, located next to the Hawaii Medical Library at the corner of Punchbowl and Beretania Streets, had recently been restored.

A copy of the first issue of the Journal is available in the Hawaii Medical Library. The Table of Contents as well as the Index by Title, Subject and Author of Volume One, September 1941 -July 1942 may be found on the Web at http://hml.org/contents/hmj01.html. Mahalo to the staff of the Hawaii Medical Library for providing this service.

"Knowledge is a source of power, and the dissemination of knowledge is one task to which the Journal is dedicated - not especially generalized knowledge of the sort which can be gained from perusal of the old established national medical journals, or more particularly knowledge pertaining to medicine in Hawaii, that all in our profession here and others who may care to read may know what are our problems and what is being done to solve them."
- editorial comment by Harry L. Arnold, Jr., M.D.

Editorial, HMJ Vol.1, No. 1

"The Bulletin is dead. Long Live the Journal."

Establishment of the Hawaii Medical Journal signalized by the appearance of this Number 1 issue of Volume 1, should not be considered an end in itself-even though it represents the fulfillment of an aspiration which certain members of the profession have long kept alive.

This is a beginning, rather than an end attained, and it behooves the staff and the rest of the profession to pause to consider of what it is the beginning-what is the task to which the career of the Journal must be dedicated if it is to justify its existence.

Our medical friends from the Mainland, who from time to time have visited Hawaii, have been with a reassuring degree of unanimity, most complimentary in their estimation of the quality of medicine practiced in the Islands, and of the standards maintained by the profession of Hawaii as compared with those of similar sized population groups elsewhere in the United States. With justifiable pride, the profession here can point to items of individual and group accomplishment which have contributed to the well-being and progress of the community. More often than not, however, it has been individual rather than collective effort which has won results-and seldom if ever has the full force of the whole, united medical profession of Hawaii been exerted to the full measure of its capabilities.

Any factor which tends to marshal and direct this power of a united profession is to be welcomed, and such a factor for good in Hawaii, the Journal well may be.

Knowledge is a source of power, and the dissemination of knowledge is one task to which the Journal is dedicated,-not especially generalized knowledge of the sort which can be gained from perusal of the old established national medical journals, but more particularly knowledge pertaining to medicine in Hawaii, that all in our profession here and others who may care to read may know what are our problems and what is being done to solve them. There is something about words put down in black and white on paper which crystallizes thought and makes usable and effective ideas which conveyed by spoken work, escape from mind and memory all too soon.

The Journal should be a medium by which the minds of our confreres may be brought into focus on problems which concern us all, -problems having to do with better standards, better practice, better health regulations, better laws. Too much of the thinking for the profession in the past has been done by too few. More enlightenment, more interest, more opinions should improve the quality of our thought, and augment the effectiveness of our influence.

The Journal should also be a means through which the effective participation of the profession in community tasks, such as the defense programs, public health education, and communicable disease control, may be improved. In such matters, through lack of information, the efforts of doctors fully willing to put their shoulders to the wheel have not been fully utilized.

If to the betterment of the profession, and to the betterment of Hawaii, the efforts of the present and future editorial staffs are dedicated, the success of the Journal is assured.

dramatically
different

Protopic®
(tacrolimus) Ointment
0.03%, 0.1%



To learn more, visit www.protopic.com

Please see brief summary of prescribing information on the following page.

Fujisawa Healthcare, Inc.

©2001 Fujisawa Healthcare, Inc. PT127 6/01

BRIEF SUMMARY

47002/Issued: December 2000

Protopic®
(tacrolimus)

Ointment 0.03%
Ointment 0.1%

FOR DERMATOLOGIC USE ONLY
NOT FOR OPHTHALMIC USE

INDICATIONS AND USAGE:
PROTOPIC Ointment, both 0.03% and 0.1% for adults, and only 0.03% for children aged 2 to 15 years, is indicated for short-term and intermittent long-term therapy in the treatment of patients with moderate to severe atopic dermatitis in whom the use of alternative, conventional therapies are deemed inadvisable because of potential risks, or in the treatment of patients who are not adequately responsive to or are intolerant of alternative, conventional therapies.

CONTRAINDICATIONS:
PROTOPIC Ointment is contraindicated in patients with a history of hypersensitivity to tacrolimus or any other component of the preparation.

PRECAUTIONS:
General

Studies have not evaluated the safety and efficacy of PROTOPIC Ointment in the treatment of clinically infected atopic dermatitis. Before commencing treatment with PROTOPIC Ointment, clinical infections at treatment sites should be cleared.

While patients with atopic dermatitis are predisposed to superficial skin infections including eczema herpeticum (Kaposi's varicelliform eruption), treatment with PROTOPIC Ointment may be associated with an increased risk of varicella zoster virus infection (chicken pox or shingles), herpes simplex virus infection, or eczema herpeticum. In the presence of these infections, the balance of risks and benefits associated with PROTOPIC Ointment use should be evaluated.

In clinical studies, 33 cases of lymphadenopathy (0.8%) were reported and were usually related to infections (particularly of the skin) and noted to resolve upon appropriate antibiotic therapy. Of these 33 cases, the majority had either a clear etiology or were known to resolve. Transplant patients receiving immunosuppressive regimens (e.g., systemic tacrolimus) are at increased risk for developing lymphoma; therefore, patients who receive PROTOPIC Ointment and who develop lymphadenopathy should have the etiology of their lymphadenopathy investigated. In the absence of a clear etiology for the lymphadenopathy, or in the presence of acute infectious mononucleosis, discontinuation of PROTOPIC Ointment should be considered. Patients who develop lymphadenopathy should be monitored to ensure that the lymphadenopathy resolves.

The enhancement of ultraviolet carcinogenicity is not necessarily dependent on phototoxic mechanisms. Despite the absence of observed phototoxicity in humans (see **ADVERSE REACTIONS**), PROTOPIC Ointment shortened the time to skin tumor formation in an animal photocarcinogenicity study (see **Carcinogenesis, Mutagenesis, Impairment of Fertility**). Therefore, it is prudent for patients to minimize or avoid natural or artificial sunlight exposure.

The use of PROTOPIC Ointment may cause local symptoms such as skin burning (burning sensation, stinging, soreness) or pruritus. Localized symptoms are most common during the first few days of PROTOPIC Ointment application and typically improve as the lesions of atopic dermatitis heal. With PROTOPIC Ointment 0.1%, 90% of the skin burning events had a duration between 2 minutes and 3 hours (median 15 minutes). Ninety percent of the pruritus events had a duration between 3 minutes and 10 hours (median 20 minutes). The use of PROTOPIC Ointment in patients with Netherton's Syndrome is not recommended due to the potential for increased systemic absorption of tacrolimus. The safety of PROTOPIC Ointment has not been established in patients with generalized erythroderma.

Information for Patients
(See patient package insert)
Patients using PROTOPIC Ointment should receive the following information and instructions:

1. Patients should use PROTOPIC Ointment as directed by the physician. PROTOPIC Ointment is for external use only. As with any topical medication, patients or caregivers should wash hands after application if hands are not an area for treatment.
2. Patients should minimize or avoid exposure to natural or artificial sunlight (tanning beds or UVA/B treatment) while using PROTOPIC Ointment.
3. Patients should not use this medication for any disorder other than that for which it was prescribed.
4. Patients should report any signs of adverse reactions to their physician.
5. Before applying PROTOPIC Ointment after a bath or shower, be sure your skin is completely dry.

Drug Interactions
Formal topical drug interaction studies with PROTOPIC Ointment have not been conducted. Based on its minimal extent of absorption, interactions of PROTOPIC Ointment with systemically administered drugs are unlikely to occur but cannot be ruled out. The concomitant administration of known CYP3A4 inhibitors in patients with widespread and/or erythrodermic disease should be done with caution. Some examples of such drugs are erythromycin, itraconazole, ketoconazole, fluconazole, calcium channel blockers and cimetidine.

Carcinogenesis, Mutagenesis, Impairment of Fertility
No evidence of genotoxicity was seen in bacterial (*Salmonella* and *E. coli*) or mammalian (Chinese hamster lung-derived cells) *in vitro* assays of mutagenicity, the *in vitro* CHO/HGPRT assay of mutagenicity, or *in vivo* clastogenicity assays performed in mice. Tacrolimus did not cause unscheduled DNA synthesis in rodent hepatocytes.

Reproductive toxicology studies were not performed with topical tacrolimus.

Pregnancy:
Teratogenic Effects: Pregnancy Category C
There are no adequate and well-controlled studies of topically administered tacrolimus in pregnant women. The experience with PROTOPIC Ointment when used by pregnant women is too limited to permit assessment of the safety of its use during pregnancy.

There are no adequate and well-controlled studies of systemically administered tacrolimus in pregnant women. Tacrolimus is transferred across the placenta. The use of systemically administered tacrolimus during pregnancy has been associated with neonatal hyperkalemia and renal dysfunction. PROTOPIC Ointment should be used during pregnancy only if the potential benefit to the mother justifies a potential risk to the fetus.

Nursing Mothers
Although systemic absorption of tacrolimus following topical applications of PROTOPIC Ointment is minimal relative to systemic administration, it is known that tacrolimus is excreted in human milk. Because of the potential for serious adverse reactions in nursing infants from tacrolimus, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.

Pediatric Use
PROTOPIC Ointment 0.03% may be used in pediatric patients 2 years of age and older. Two phase 3 pediatric studies were conducted involving 606 patients 2-15 years of age: one 12-week randomized vehicle-controlled study and one open-label, 1 year, long-term safety study. Three hundred and thirty (330) of these patients were 2 to 6 years of age.

The most common adverse events associated with PROTOPIC Ointment application in pediatric patients were skin burning and pruritus (see **ADVERSE REACTIONS**). In addition to skin burning and pruritus, the less common events (< 5%) of varicella zoster (mostly chicken pox), and vesiculobullous rash were more frequent in patients treated with PROTOPIC Ointment 0.03% compared to vehicle. In the long-term 1 year safety study involving 255 pediatric patients using PROTOPIC Ointment, the incidence of adverse events, including infections, did not increase with increased duration of study drug exposure or amount of ointment used. In 491 pediatric patients treated with PROTOPIC Ointment, 3(0.6%) developed eczema herpeticum. Since the safety and efficacy of PROTOPIC Ointment have not been established in pediatric patients below 2 years of age, its use in this age group is not recommended.

Geriatric Use
Twenty-five (25) patients ≥ 65 years old received PROTOPIC Ointment in phase 3 studies. The adverse event profile for these patients was consistent with that for other adult patients.

ADVERSE REACTIONS:

No phototoxicity and no photoallergenicity was detected in clinical studies of 12 and 216 normal volunteers, respectively. One out of 198 normal volunteers showed evidence of sensitization in a contact sensitization study.

In three randomized vehicle-controlled studies and two long-term safety studies, 655 and 571 patients respectively, were treated with PROTOPIC Ointment.

The following table depicts the adjusted incidence of adverse events pooled across the 3 identically designed 12- week studies for patients in vehicle, PROTOPIC Ointment 0.03%, and PROTOPIC Ointment 0.1% treatment groups, and the unadjusted incidence of adverse events in two one year long-term safety studies, regardless of relationship to study drug.

Incidence Of Treatment Emergent Adverse Events

	12-Week, Randomized, Double-Blind, Phase 3 Studies 12-Week Adjusted Incidence Rate (%)					Open-Label Studies (up to 1 year) 0.1% Tacrolimus Ointment Incidence(%)	
	Adult			Pediatric		Adult	Pediatric
	Vehicle n=212	0.03% Tacrolimus Ointment n=210	0.1% Tacrolimus Ointment n=209	Vehicle n=116	0.03% Tacrolimus Ointment n=118	n=316	n=255
Skin Burning†	26	46	58	29	43	47	26
Pruritus†	37	46	46	27	41	25	25
Flu-like symptoms†	19	23	31	25	28	22	35
Allergic Reaction	8	12	6	8	4	22	15
Skin Erythema	20	25	28	13	12	12	9
Headache†	11	20	19	8	5	10	18
Skin Infection	11	12	5	14	10	11	11
Fever	4	4	1	13	21	2	18
Infection	1	1	2	9	7	14	8
Cough Increased	2	1	1	14	18	3	15
Asthma	4	6	4	6	6	5	16
Herpes Simplex	4	4	4	2	0	12	5
Eczema Herpeticum	0	1	1	0	2	2	0
Pharyngitis	3	3	4	11	6	5	10
Accidental Injury	4	3	6	3	6	4	12
Pustular Rash	2	3	4	3	2	6	8
Folliculitis†	1	6	4	0	2	11	2
Rhinitis	4	3	2	2	6	5	5
Otitis Media	4	0	1	6	12	1	7
Sinusitis†	1	4	2	8	3	3	7
Diarrhea	3	3	4	2	5	4	6
Urticaria	3	3	6	1	1	5	5
Lack of Drug Effect	1	1	0	1	1	10	2
Bronchitis	0	2	2	3	3	3	6
Vomiting	0	1	1	7	6	1	5
Maculopapular Rash	2	2	2	3	0	4	3
Rash†	1	5	2	4	2	2	5
Abdominal Pain	3	1	1	2	3	1	5
Fungal Dermatitis	0	2	1	3	0	2	6
Gastroenteritis	1	2	2	3	0	4	2
Alcohol Intolerance†	0	3	7	0	0	6	0
Acne†	2	4	7	1	0	2	4
Sunburn	1	2	1	0	0	4	4
Skin Disorder	2	2	1	1	4	1	4
Conjunctivitis	0	2	2	2	1	4	2
Pain	1	2	1	0	1	4	3
Vesiculobullous Rash†	3	3	2	0	4	2	2
Lymphadenopathy	2	2	1	0	3	2	3
Nausea	4	3	2	0	1	1	2
Skin Tingling†	2	3	8	1	2	2	1
Face Edema	2	2	1	2	1	3	1
Dyspepsia†	1	1	4	0	0	1	4
Dry Skin	7	3	3	0	1	0	1
Hypoesthesia†	1	3	7	0	0	3	0
Skin Neoplasm Benign‡‡	1	1	1	0	0	2	3
Back Pain†	0	2	2	1	1	3	1
Peripheral Edema	2	4	3	0	0	2	1
Varicella Zoster/ Herpes Zoster‡‡	0	1	0	0	5	1	3
Contact Dermatitis	1	3	3	3	4	1	1
Asthenia	1	2	3	0	0	2	1
Pneumonia	0	1	1	2	0	1	2
Eczema	2	2	2	0	0	3	0
Insomnia	3	4	3	1	1	1	0
Exfoliative Dermatitis	3	3	1	0	0	0	2
Dysmenorrhea	2	4	4	0	0	0	2
Periodontal Abscess	1	0	1	0	0	3	0
Myalgia†	0	3	2	0	0	1	0
Cyst†	0	1	3	0	0	0	0

† May be reasonably associated with the use of this drug product

‡ Four cases of chicken pox in the pediatric 12-week study; 1 case of "zoster of the lip" in the adult 12-week study; 7 cases of chicken pox and 1 case of shingles in the open-label pediatric study; 2 cases of herpes zoster in the open-label adult study.

‡‡ Generally "warts".

Other adverse events which occurred at an incidence greater than or equal to 1% in any clinical study include: alopecia, ALT or AST increased, anaphylactoid reaction, angina pectoris, angioedema, anorexia, anxiety, arrhythmia, arthralgia, arthritis, bilirubinemia, breast pain, cellulitis, cerebrovascular accident, cheilitis, chills, constipation, creatinine increased, dehydration, depression, dizziness, dyspnea, ear pain, ecchymosis, edema, epistaxis, exacerbation of untreated area, eye disorder, eye pain, furunculosis, gastritis, hernia, hyperglycemia, hypertension, hypoglycemia, hypoxia, laryngitis, leukocytosis, leukopenia, liver function tests abnormal, lung disorder, malaise, migraine, neck pain, neuritis, palpitations, paresthesia, peripheral vascular disorder, photosensitivity reaction, procedural complication, routine procedure, skin discoloration, sweating, taste perversion, tooth disorder, unintended pregnancy, vaginal moniliasis, vasodilatation, and vertigo.

OVERDOSAGE:
PROTOPIC Ointment is not for oral use. Oral ingestion of PROTOPIC Ointment may lead to adverse effects associated with systemic administration of tacrolimus. If oral ingestion occurs, medical advice should be sought.

DOSAGE AND ADMINISTRATION:
ADULT
PROTOPIC Ointment 0.03% and 0.1%

Apply a thin layer of PROTOPIC Ointment 0.03% or 0.1% to the affected skin areas twice daily and rub in gently and completely. Treatment should be continued for one week after clearing of signs and symptoms of atopic dermatitis.

The safety of PROTOPIC Ointment under occlusion which may promote systemic exposure, has not been evaluated. **PROTOPIC Ointment 0.03% and 0.1% should not be used with occlusive dressings.**

PEDIATRIC
PROTOPIC Ointment 0.03%

Apply a thin layer of PROTOPIC Ointment 0.03% to the affected skin areas twice daily and rub in gently and completely. Treatment should be continued for one week after clearing of signs and symptoms of atopic dermatitis. The safety of PROTOPIC Ointment under occlusion, which may promote systemic exposure, has not been evaluated. **PROTOPIC Ointment 0.03% should not be used with occlusive dressings.**

Rx only

Fujisawa Healthcare, Inc.
Deerfield, IL 60015-2548
47002/Issued: December 2000

Fujisawa Healthcare, Inc.

©2001 Fujisawa Healthcare, Inc. PT127 6/01

The Kulia Program: Psychiatric Rehabilitation in Hawaii

F.M. Baker MD, MPH and Patricia Nakasukasa RN

Abstract

The Kulia Program was a culturally oriented, psychiatric rehabilitation program. It was developed in the only in-patient psychiatric hospital serving the 2 million multi-ethnic residents of the island state of Hawaii. From 1992-1999 the Kulia program was implemented on the only open, 36-bed unit of the Hawaii State Hospital with the mission of facilitating the reintegration of the chronically mentally ill into the community by encouraged its patients "to strive for the highest." Of the 238 patients discharged between 1992 and 1999 only 7% were re-hospitalized. Comparisons with other four treatment units during this period were not appropriate because of the difference in patient populations. These units provided long-term institutionalization of the criminally mentally ill, the behaviorally disoriented, mentally retarded and/or traumatically brain injured, and the behaviorally disoriented demented elderly. Their lengths of stay varied from 8 years to over 20 years in the hospital during this time period.

Introduction

Psychiatric rehabilitation began with Lamb.[1] He characterized moral treatment as the first organized psychiatric rehabilitation in the United States. The work of Adolf Meyer[2] emphasized the need to understand the role of social environment and biological factors in determining psychopathology and supported Clifford Beers[3] in establishing the mental hygiene movement. The goals of the mental hygiene movement of the 1900s included rehabilitation.

The discovery and use of antipsychotic medication in 1950 increased the number of psychiatric patients able to live in the community, and with the federal funding of community mental health centers in the 1960s, a precipitous decline in the number of patients in psychiatric hospitals occurred. The work of Anthony,[4] Anthony et al.,[5] Liberman et al.,[6-8] Wing and Morris,[9] and Lamb and Lamb et al.[1,10-11] helped to define the field of psychiatric rehabilitation.

In reviewing the historical development of psychiatric rehabilitation Anthony and Liberman[12] noted the importance of the 1943 amendments to the United States Rehabilitation Act that extended financial support and vocational rehabilitation services to the psychiatrically disabled. This legitimized the idea of training and rehabilitation of psychiatrically disabled individuals and grounded psychiatric rehabilitation in vocational rehabilitation.[12]

Anthony, Kennard, O'Brien, and Forbess[13] defined the "mission" of psychiatric rehabilitation as "to ensure that the person with the psychiatric disability can perform those physical, emotional, and intellectual skills needed to live, learn, and work in his or her own particular community, given the least amount of intervention necessary from agents of the helping professions." Most recently, Bachrach[14] defined the central goal of psychiatric rehabilitation as enabling patients with long-term mental illness to develop their capacities to the fullest extent possible.

In the 1960s-1980s period the field of psychiatric rehabilitation grew and developed. In contrast to prior treatment approaches, psychiatric rehabilitation emphasized the evaluation of observable outcomes and the utilization of the evaluation.[15] The outcomes being measured included: 1) client behavioral change (mastery of skills and activities) and 2) client and society benefits because of the psychiatric rehabilitation intervention. These authors provided critiques of existing measurement instruments.

Anthony et al.[13] emphasized 25 myths that needed to be eliminated to prevent them from hindering the development of psychiatric rehabilitation. These included the beliefs that: increasing treatment compliance could singularly effect rehabilitation outcome; community based treatment setting were well utilized by persons who were psychiatrically disabled, where a person was treated was more important than how the person was treated, and a person's rehabilitative outcome was a function of the credentials of the mental health professional with whom the person interacted.

Anthony, Cohen, and Farkas[15] specified the ten essential ingredients of a psychiatric rehabilitation treatment program that differentiated this program from program that were "rehabilitation" in name only (Table 1, *see next page*). These authors acknowledged the synonymous use of the terms psychosocial rehabilitation and psychiatric rehabilitation. Programs functioning as psychiatric rehabilitation programs "were designed to remove or reduce those residual handicaps which interfere with psychiatrically disabled person's abilities to function in their own communities." Anthony and Lieberman[12] noted that multiple types of skills were required to implement patient-specific treatment plans targeted to maximize the strengths, to develop the skills, to decrease problematic behaviors, and to teach the behaviors needed by the patient to function in the patient's discharge environment.

The initial failure of mental health professionals to address the psychosocial needs and rehabilitation of the chronically mentally ill resulted in non-professionals and patients establishing psychosocial self-help clubs, such as Fountain House.[16,17] The focus of Fountain House was: 1) to develop strategies to help people cope with the environment rather than succumb to it, 2) to achieve health induction rather than symptoms reduction, and 3) to foster a belief in the potential productivity of the most severely, psychiatrically disabled

Table 1.— Essential Ingredients of a Rehabiliation Program

(A* = Present in the Kulia Program)

1. Functional Assessment in Relation to Environment Demands (identification of the patient's strengths and deficits in relation to skill demands in the particular environment in which the patient plans to function)*
2. Patient Involvement in the Assessment and Intervention Phase Rehabilitation (patient communications his or her plans, experiences, feelings, ideas, and goals)*
3. Systematic Individual Client Rehabilitation Plans (sequential behaviors to be completed by the patient in order to achieve the rehabilitation goal)*
4. *Direct Teaching of Skills to Clients (developing a plan of* what *is to be taught and* how *it will be taught to the patient)**
5. *Environmental Assessment and Modification (environmental modification involving* assessment of the strengths and deficits of resources in particular client environments and the development of programs to address each)*
6. Follow-Up of Clients in the Real-Life Environment (monitoring the patient's progress in his or her real-life environment maybe done through the report of significant others)*
7. Rehabilitation Team Approach (team approach enables all learning, living, and working skills needed to achieve rehabilitation/return to the community to be comprehensively assessed)*
8. Rehabilitation Referrals (psychiatric rehabilitation referrals are made as goal directed, not activity oriented, for a specific patient behavioral outcomes related to a specific functional deficit with a timeline for achieving the results)*
9. Evaluation of Observable Outcome and Utilization of Evaluation Results (accomplished by follow-up of clients in their real-life environments provides a foundation for the evaluation of accomplishments of practitioner and agency)*
10. Consumer Involvement in Policy and Planning (involvement of consumers, i.e. patients, in planning meetings and satisfaction ratings) * *(Begun in 1998)*

Modified from Anthony WA, Cohen M, Farkas M. A psychiatric treatment program: can I recognize one if I see one? Community Mental Health Journal *1982,18:83-96.*

patients.[16] Peterson[17] spoke movingly of a change in his self-perception from "chronic patient" to "member" of the Fountain House community. He stressed the importance of an accepting, supportive environment in maximizing change and underscoring the importance of enabling each member to have his or her own apartment and to have meaningful activity in the person's life.

Background

In contrast to many mainland states, Hawaii is comprised of seven habitable islands. There is no majority population. Thirty-four percent of the Hawaiian population is Asian [Japanese (20%), Chinese (3%), Filipino (10%), Korean (1%)], 21% are Native Hawaiian or part Hawaiian, 22% are Caucasian, 21% are Other Mixed Ancestry (not including part-Hawaiian), and 2% are Other [African American (1%), Samoan/Togan (0.8%), Puerto Rican (0.1%).[18] The ethnic composition of the Hawaii State Hospital Staff is reflective of the state and that fact facilitates an understanding of the cultural expectations and mores of Hawaiian, Filipino, South Pacific Islanders (Samoan and Tongan), Japanese, Caucasian, Chinese, African American, and Korean patients.

The Hawaii State Hospital (HSH), built in 1944 to provide psychiatric services to Hawaii residents, has had a checkered history. Overcrowding, excessive length of stay (years), and minimal quality of life standards for patients resulted in a federal consent degree in 1989 that mandated specific changes in patient-staff ratios, resources available to patients (food, clothing, personal space), type of treatment provided, and mandated the development of out-patient services for the least restrictive alternatives of care. The establishment of an affiliation with the Department of Psychiatry of the John A. Burns School of Medicine in 1991 brought medical school faculty to the HSH, as clinical psychiatrists, to improve the assessment, care, and treatment provided to the patient population. The collaboration between the Adult Division of Mental Health of the Department of Health of the State of Hawaii and the Department of Psychiatry of the John A. Burns School of Medicine resulted in the HSH obtaining accreditation by the Joint Commission of Hospitals in 1996 and, again, in 1999.

The patient population was initially referred mainly from the acute emergency rooms of the islands of Oahu, Maui, and Hawaii as well as patients from the Department of Correction facilities on those islands that required in-patient psychiatric treatment. In 1991 in order to facilitate improved patient flow and to target treatment to specific patient populations, the HSH was reorganized into an acute admission unit, a transitional step-down unit, and five treatment units which focused upon specific populations: the elderly, the mentally retarded and persons with traumatic brain injury, patients with personality disorders who committed "high profile" crimes of murder and/or sexual assault, and chronically, mentally ill (one locked and one open unit). In several mainland states (e.g.New York state) each of these HSH units would be a separate state hospital housing a specific population, e.g., a hospital for the institutionalized mentally retarded, a forensic hospital for the criminally insane, and a hospital caring for the chronically, mentally ill with an acute admission unit.

This paper describes the development of the Kulia Program on the 36-bed, open treatment unit of the HSH Focusing upon the chronically mentally ill; this psychosocial program was developed within a single unit of a state hospital to address the needs of its changing patient population.

Kulia Program

The Kulia I Ka Nu'u Program's name in Hawaiian means, "striving for the highest." Patients admitted to this unit were more likely to have a diagnosis of schizophrenia (75% of patients) and to have arrived at the hospital as being Unfit to Proceed from their court hearing because of mental illness, because of revocation of a Conditional Release, or because of misdemeanor charges caused by psychotic behavior. A small subsection of the patients were sexual offenders who had sexually assaulted or repeatedly exposed their genitalia. These patients were moved to the unit with the closing of beds in an older section of the HSH in 1992 and were believed to be able to participate in the Kulia Program and ready to move toward discharge from the hospital. Patients earned Patient Incentive Points (PIP) by maintaining a minimal level of personal hygiene and grooming, keeping their personal space organized with beds made, and participation in a scheduled program of activities as determined by the patient and staff observations reviewed in the patient's treatment team meetings.

Specific one hour educational, skills training, and interpersonal skills groups were held Monday through Friday from 9:30-10:30 followed by a 30-minute break before lunch (11:00-11:30) and from 13:30-13:30 following a 60-mminute break. Patients had unscheduled time between 15:30-17:30. Patient could go to the gym for exercise, go for a community walk, read or watch educational television program or video on the units, or use the time for personal grooming. Patients who were unable to successfully utilize "free time" met with the patient's treatment team and target goals were

established. Some patients were placed in leisure time skills building module implemented by the Recreational Therapy Department to aid them in the development of leisure time interests. Dinner occurred daily from 17:30-18:00. Evening activities focused upon social, recreational activities such as word games, table tennis, pool, reading, and crafts. Alcoholics Anonymous (AA) meetings (twice per week) and Narcotics Anonymous (NA) meetings (twice a week) were part of the evening Kulia Program for those patients requiring substance abuse treatment.

The cultural basis of the Kulia Program was reflected in the incorporation of Hawaiian culture into every component of the program. The educational program including Hawaiian language and customs. Recreational activities included games indigenous to the islands (balancing a specially rounded stone). Crafts activities included making flower necklaces (leis). Fund raising activities featured Hawaiian foods including poi (pounded taro), a local delicacy - Spam musubi (a slice of fried Spam wrapped in rice circled by dried sea weed), and Portuguese malasadas (fried donuts). Patients from other cultures were encouraged to share their language, stories of creation, special foods, and societal organization in a class focused on the various cultures comprising Hawaii. Patients were encouraged to identify their unique history in a group focused on development through the life cycle. Recreational trips to important historical sites in Hawaiian culture and history on the island of Oahu were planned and implemented by the patient community. The Hawaiian Cultural Heritage component of the Kulia program, also, included a bi-weekly group, called Malama Na Ike I and II. One group focused upon beautification of the grounds around the open unit with Native Hawaiian plants and an understanding of their significance in Hawaiian culture. The second group focused upon the history, culture, and language of the Hawaiian people. Patients from other cultural groups (African American, Caucasian, Japanese) participated in both groups depending upon their interest in these areas. Only on the open usnit was this cultural focus incorporated throughout the treatment program. The presence of the HSH multicultural staff facilitated patient engagement and effective communication with the patient's treatment team.

Individual treatment sessions were held with members of the treatment team from 9:00-9:30 and 13:30-16:30 for 30 minutes to 60 minutes depending upon the focus of the session. Group psychotherapy sessions occurred in the afternoon time period, also. Table 2 summarizes one schedule of groups (educational, social skills, substance abuse treatment and prevention, prevocational and vocational rehabilitation, and community reintegration for one patient during one nine-week cycle of the Kulia Program. In the eighth week of each cycle, a treatment plan meeting was held. Patients and members of the patient's treatment team developed the individual schedule for the next 9-week cycle.

Patients had the opportunity to have input into the programming and the development of specific activities, such as fund-raisers. The monies raised were used for a specific patient community activity determined by the patients such as a cookout or trip to a location of

Table 2.— Kulia Schedule

KULIA SCHEDULE

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8-8:30	Patient Rounds		Patient Rounds	Patient Rounds	
8:30-9:00	Community Meeting	Community Meeting	Community Meeting	Community Meeting	Community Meeting
9-9:20	Nursing Team Mtgs/Work Individual Session	Nsg Team Mtgs/Work Individual Session	Nsg Team Mtgs/Work Individual Session	Nsg Team Mtgs/Work Individual Session	Nsg Team Mtgs/Work Individual Session
9:20-9:30	Patients' Break	Patients' Break	Patients' Break	Patients' Break	Patients' Break
9:30	Substance Abuse Education Group (SW, Nursing - Activity room) Talk Story Group (Psychology -E Conf. Room) Substance Abuse Process Group "B" (SW, Nursing - Classroom 2) Living Skills (Ward OT, Nursing - Classroom 1) What's News? (Nursing - Lobby or Day room)	*8-30-10:30 Sex Offenders' Group (Psychology - Guensberg) Spiritual Journey (Psychology, Chaplain) Coping Skills (Ward OT, Nursing - Classroom 1) Library World (Nursing - Village Green Library) *10:30-11:15 Neuropsych Training Neuropsychology - Building L	Anger Management (Social Work, Nursing - Classrm 2) Beautification Activity (Nursing - Day area, courtyard grounds around E) Communication Skills (Nursing, Ward OT) Discharge Readiness I (SW, Nursing - Activity Room)	Computer Skills (OT Skills Center) *9-10a / *9-11a Basic Conversational Skills Grp (Nsg, MD - Activity Room) Feelings Through Music Group (RMT, Psychology - Auditorium) Remotivation Group (Ward OT, Msg - Classroom 1) Stress-Ease II Group (RT, Nursing - Classroom 2) Relapse Prevention (Psychology, Dr. Wood, Dr. Zodrow Guensberg Bldg) *10-11a / *11a-12p	Job Skills (OT - Skills Center) *8-9a *9:30-10:30a Skills Expolration (OT-Skills Clr) *8-9a *8:30-10a Malama Na Ike Activity (Nsg - Community Cultural Sites & E) Kulia Brain Gym Group (Nursing - Activity Room) Crafts 'n Arts Group (RT, Nursing - Classroom 2)
10:30	TPs/Individual Contacts	TPs/Individual Contacts	TPs/Individual Contacts	TPs/Individual Contacts	TPs/Individual Contacts
11-11:30	Patients' Lunch	Patients' Lunch	Patients' Lunch	Patients' Lunch	Patients' Lunch
11:30-12:30	Patients' Rest Time	Patients' Rest Time	Patients' Rest Time	Patients' Rest Time	Patients' Rest Time
12:30	WORK Health Education Group (Nursing - Activity Room) Treatment Planning Group Psychology, Nsg - E Conference Rm Money Management (Ward OT, Nursing - Classroom 1) *1:30-2:30 Adult Education (DOE - Village Green Library)	*11:45-1:30 Escorted AA Community Meeting (RT, Nsg - Aikahi Church Site) WORK Gym with Unit E Staff Nursing - Gymnasium) Personal Effectiveness (Ward OT, Nsg - Classroom 1) Symptom Management (Nursing, MD - Activity Room)	WORK Pass Prep Group (Nursing, Ward O.T. - Classroom 1) Medication Management (Nursing, MD - Activity room) Wellness Group (Nursing - Classroom 2) *1:15-7:00p: Community Reintergration Bus Module (RT - Community Sites)	WORK Substance Abuse Process Group "A" - (SW,Nsg-Classroom 2) Men's Activity (Nursing - Activity Room) Getting Along Group (RT, Nursing - Day room) Hygiene/ADL s/Etiquette Group (Nursing, Ward OT- Classroom 1)	WORK Polynesian Story-telling Activity (Nursing - E Conference Room) Cognitive Games (Nursing - Activity Room) Self-Esteem / Awareness (O.T., Nursing - Classroom 1)
1:30-2:00	Team Wrap-Up Meetings	Team Wrap-Up Meetings	Team Wrap-Up Meetings	Team Wrap-Up Meetings	Team Wrap-Up Meetings
2:00-2:30	Pt. Break / Individual Contact Individual Session	Pt. Break / Individual Contact Individual Session	Pt. Break / Individual Contact Individual Session	Pt. Break / Individual Contact Individual Session	Pt. Break / Individual Contact Individual Session
2:30-3:15	Educational Video (Nursing - dayroom) Open Gym Activities (Gymnasium) Individual Session	Educational Video (Nursing - dayroom) Open Gym Activities (Gymnasium) Individual Session Model Making Group (R.T. - Day area) Percussion Group (RMT - Auditorium)	Educational Video (Nursing - Dayroom) Open Gym Activities (Gymnasium) Individual Session	Educational Video (Nursing - dayroom) Open Gym Activities (Gymnasium) Individual Session	Educational Video (Nursing - dayroom) Open Gym Activities (Gymnasium) Individual Session Music Session (RMT - Auditorium)

7/6/98 - 9/4/98 CYCLE

Hawaiian historical significance or to a specific cultural festival (Hawaiian Taro Festival, Japanese Bon Dance, Greek Cultural Festival, Native American Pow-Wow). Staff worked with the elected patient leaders to plan these activities.

A diabetic, Hawaiian-Chinese patient admitted with a diagnosis of Schizophrenia Paranoid Type and Crystal Methamphetamine Dependence, and Cannabis Abuse may be assigned to the following groups for her first 9 weeks on the unit: Understanding Mental Illness Group, Medication Education Group, Substance Abuse Education Group, Personal Effectiveness Group, Hawaiian Culture Group, Anger Management Group, Personal Grooming Group, an Adult Development Group, and a Spiritual Journey Group. These groups would enable the patient to improve her understanding of her mental illness, the role of medication in its treatment, the effect of substance abuse upon her mental illness, facilitate an identification of her bi-cultural heritage, improve her interpersonal interactions and ability to manage anger as well as personal grooming, and to aid the patient to compare her current life course with the usual tasks, goals, and relationship of persons of her age. The Spiritual Journey Group focused upon the role of religious belief in each person's life and encouraged the patient to identify it in her life. Recreational activities focused upon the development of alternative activities for remaining physically fit and identified specific patterns of leisure time activities, frequently a deficit for these chronically mentally ill. A special Recreational Therapy module helped patients to use public transportation with a structured program which established a destination, planned the buses to be taken, made the trip accompanied by a recreational therapist, and reviewed the extent to which each patient had met his or her goals in travel, behavior, and resource utilization. When indicated, neuropsychological and nutritional consultation were requested to address the specific goals of improving the patient's information processing and to improve diet planning and food choice for the diabetic patient.

The Patient Incentive Points (PIPs) that were earned could be used in the community reintegration activities on weekends that included traveling by van to participate in a local beach cleanup, attendance at a cultural festival (e.g. Hawaiian Taro Festival, Japanese Bon Dance, celebration of the Chinese New Year), visiting the local library to obtain a library card and to take out books and videos. PIP points were also used to go Wiki Wiki (fast and cheap) shopping to pick up items that were not provided by the hospital including special foods (siamen noodle soup), batteries for Walkman radios, and personal clothing. Wiki Wiki shopping provided an opportunity to emphasize the skills of budgeting and managing finances. These ommunity reintegration outings served as an on-going monitor o patient's ability to mange their finances and to plan leisure tie activities.

As patients improved in their level of appropriate behavior, each patient and patient's treatment team could elect to complete a vocational assessment during the in-patient hospitalization. Upon completion of the assessment, the patient working with the occupational therapist, identified work assignments within the HSH for which the patient could earn monies while demonstrating work readiness skills.

All group assignments for the Kulia Program resulted from the initial comprehensive evaluation of each patients involved in assessment by psychiatry, psychology, social work, nursing, recreational therapy, and occupational therapy. Each patient's individual strengths and weaknesses were established in an interview with the patient's team's social worker. In treatment planning sessions the patient's goals for the hospitalization were identified and in monthly treatment planning meetings the attainment of these treatment goals was assessed and new goals established with the patient. The Kulia Program group assignments were for a 9-week cycle. In the eighth week of the current cycle the patient met with his or her treatment team and reviewed the patient's progress and established the patient's groups for the next cycle.

Outcomes

The HSH in the 1990s continued as a unique institution. Its various in-patient units housed very different patient population. Because 50% of its population came as forensic admissions, the average length of stay was over 18 months, including an additional 3-6 months to complete the court-ordered evaluation for conditional release and the receipt of the final judicial determination at the court hearing. In contrast to many mainland, public, in-patient units with length of stays in days or weeks, patients admitted to HSH's only open unit remained in in-patient treatment an average of nine months. Prior to the most recent reorganization of the hospital and an emphasis upon discharge, the annual discharge rate of the Kulia Program was higher than the discharge rate for the other units. The geriatric unit discharged patients only at death, an average of one per 2.5 years. The unit focused upon the treatment of high profile, personality disordered, criminals rarely discharged patients from he hospital resulting in Length of Stays of 6 years to over 20 years. Discharges to the community from the unit treating the developmentally disabled and traumatic brain injured patients, and the closed unit for the chronically mentally ill were difficult because of the limited number of community services and housing existing during this period and the impact of a narrow range of linked community mental health services existent at that time.

Because of the diverse mission of each unit based upon each unit's specific population, a comparison of the treatment programs and resulting readmission rates is an unequal comparison. Given this caveat, of the 238 patients discharged from the Kulia Program between 1992-1999, only 7% were readmitted. The readmission rate was approximately 20% for those few patients who were discharged from the four other treatment units. The lower recidivism rate for the open unit's Kulia Program was one important outcome marker in terms of in-patient costs saved as well as an indicator of the successful modification of the patient's problem behaviors that resulted in the need for in-patient treatment. This is a result similar to a naturalistic study of treatment of the chronically mentally ill that compared the states of Maine (usual treatment) and Vermont (variant of psychiatric rehabilitation program) with Vermont patients doing better in rates of rehospitalization, absence of symptoms, employment, living successfully in the community, and global functioning.[19]

The presence on the grounds of the HSH of a halfway house, privately run, facilitated a physical transfer from the in-patient Kulia Program to outpatient treatment. The proximity of this residence to the former inpatient unit was important for some very fragile patients with chronic mental illness who had significant problems with the transition from the in-patient setting. Although formally

discharged from the hospital, these patients could remain on hospital grounds while making their first initial transition into community care.

Comment

The Kulia Program provides one successful model of incorporating cultural diversity within an in-patient psychiatric rehabilitation program in a state hospital serving a diverse patient population. Although designed originally primarily for chronically, mentally ill, schizophrenic patients, the program evolved to include work with patients with dual diagnoses involving substance abuse as well as patients with psychosexual disorders and offenses. The maintenance of these patients in their discharge communities is a reflection of the success of the program. The importance of the linkages that the Kulia Program established with community services and outpatient treatment teams was recognized and incorporated into a new treatment model currently being implemented at the HSH to facilitate discharges and to decrease the Length of Stay for the total hospital population. Linkages that did not exist effectively before the development of the Kulia mode are being established and institutionalized by the Adult Division of Mental Health of the Department of Health of the State of Hawaii as a new comprehensive network of psychiatric community services are developed. In contrast to most mainland states only in 1999 was an Oahu island-based Assertive Community Team (ACT) established through the initiative of the Adult Division of Mental Health of the Department of Health of the State of Hawaii in its effort to develop a comprehensive range and network of services.

In order to meet the mandates of the Department of Justice to standardize care across all treatment units at the HSH, the Kulia Program model was incorporated into a standardized rehabilitation model developed by the Adult Division of Mental Health of the Department of Health of the State of Hawaii. In order to facilitate the standardization of treatment, the HSH has had a decrease in its bed capacity and its units have been reorganized, again, into one admission and three treatment units. All treatment units now are locked and contain a mixed population of patients: the chronically mentally ill; the dually diagnosed; and the personality disordered, substance abusing, court-committed criminal offenders. Intensive staff training[20] preceded the unit reorganizations and continues as a new, standardized treatment model incorporates a schedule of educational, skills training, anger management, and interpersonal skills groups centrally held on the campus of the HSH.

In the HSH structure of the 1990s the Kulia Program provided an example of what could be accomplished with psychosocial rehabilitation in an increasingly diverse population. Its emphasis upon Hawaiian culture facilitated the sense of history, prior accomplishments, and sense of heritage for Hawaiian and part-Hawaiian patients as well as the diverse culture comprising the state of Hawaii. Although serving a segment of the HSH patient population very well, the majority of HSH patients at that time could not participate in the Kulia Program.

As with any change, there are losses and gains. Although the Kulia Program no longer exists, the model of rotating classes addressing activities of daily living, social functioning, education about medication and treatment, and community reintegration activities comprise the core of classes now centrally offered to all patients on the revised treatment units. Efforts to establish a Fountain House model on the island of Oahu have begun.

Conclusion

The Kulia Program developed on the only open unit of the only public mental health hospital in the state of Hawaii met the 10 essential features of a psychiatric rehabilitation program as articulated by Anthony, Cohen, and Farkas in 1982 (see Table 1). It was unique in providing a psychiatric rehabilitation program that incorporated a culturally sensitive component. In order to standardize care to a redefined and downsized forensic patient population at the HSH the Kulia Program formally ended in 2000 with the reorganization of the HSH into a closed, forensic facility.

Authors

F.M. Baker MD, MPH
Clinical Professor, Department of Psychiatry
University of Maryland, School of Medicine
Baltimore, Maryland

Patricia Nakasukasa RN
Associate Director, Kulia Program
Hawaii State Hospital
Kaneohe, Hawaii

References

1. Lamb HR and associates. *Rehabilitation in Community Mental Health.* San Francisco, Cal: Jossep-Bass; 1971.
2. Mora G, Brand J, eds. *Psychiatry and Its History.* Springfield, Ill: Thomas; 1970.
3. Beers CW. *A Mind That Found Itself.* New York, New: Longmans, Green; 1908.
4. Anthony WA. *The Principles of Psychiatric Rehabilitation.* Baltimore, Mar: University Press; 1980.
5. Anthony WA, Farkas M. A client outcome planning model for assessing psychiatric rehabilitation interventions. *Schizophrenia Bull* 1982, 8:13-38
6. Liberman RP, King LW, DeRisi WJ. *Personal Effectiveness: Guiding People to Assert Feelings and Improve Their Social Skills.* Campaign, Ill: Research Press; 1975.
7. Liberman RP, McCann MJ, Wallace CJ. Generalization behavior therapy with psychotics. *Br J Psychiatry* 1976, 29:490-496.
8. Liberman RP, DeRisi WJ, Mueser KT. *Social Skills Training for Psychiatric Patients.* New York, New: Pergamon; 1989.
9. Wing JK, Morris B, eds. *Handbook of Psychiatric Rehabilitation Practice.* New York, New: Oxford University Press; 1981.
10. Lamb HR, Mackota C. Vocational services in a community mental heath program. *Hosp Community Psychiatry* 1968, 19:315-318.
11. Lamb HR. A century and a half of psychiatric rehabilitation in the United States. *Hosp Community Psychiatry* 1994,45:1015-1020.
12. Anthony WA, Liberman RP. The practice of psychiatric rehabilitation: historical, conceptual, and research basis. *Schizophrenia Bull* 1986, 12:542-559
13. Anthony WA, Kennard WA, O'Brien WF, Forbess R. Psychiatric rehabilitation: past myths and current realities. *Community Ment Health J* 1986, 22:249-262.
14. Bachrach LL. Psychosocial rehabilitation and psychiatry in the care of long-term patients. *Am J Psychiatry* 1992, 149:1455-1463
15. Anthony WA, Cohen M, Farkas M. A psychiatric rehabilitation treatment program: can I recognize one if I see one? *Community Ment Health J* 1982, 19:83-96.
16. Bearde JH, Propst RN, Malamud TJ. The Fountain House model of psychiatric rehabilitation. *Psychosocial Rehabilitation J* 1982, 5:47-59.
17. Peterson R. What are the needs of chronic mental patients? *Schizophrenia Bull* 1982, 8:610-616.
18. Department of Business, Economic Development, and Tourism, State of Hawaii. *The State of Hawaii Data Book, 1997: A Statistical Abstract.* Honolulu, Haw: Department of Business, Economic Development, and Tourism, State of Hawaii; 1998.
19. DeSisto MJ, Harding CM, McCormick RV, Ashikaga T, Brooks GW. The Maine and Vermont three-decade studies of serious mental illness. I. Matched comparison of cross-sectional outcomes. *Br J Psychiatry* 1995, 176:331-342.
20. Rogers ES, Cohen BF, Danley KS, Hutchinson D, Anthony WA. Training mental health workers in psychiatric rehabilitation. *Schizophrenia Bull* 1986, 12:709-719.

Medical School Hotline

Medical Education Fellowship in the Office of Medical Education at the John A. Burns School of Medicine

Damon H. Sakai, M.D.
Associate Professor, Medicine
and
Richard T. Kasuya, M.D., M.S.Ed.
Director, Office of Medical Education

Faculty development is vital to maintain quality education and curricular innovation at academic institutions. Evidence is building that faculty development in instructional skills with select participants improves knowledge of effective teaching, observed teaching behaviors, and teacher evaluations.[1] Despite this fact, clinician-educators are assigned to teach in an ever-evolving academic environment without the benefit of any formal instruction in teaching skills.

Faculty development plays an important role in promotion and retention. In recent years, much attention has been given to the challenge clinician-educators face when seeking advancement in academia. In a survey of medical school promotion committees, those aspects of a clinician-educator's performance deemed most important for promotion from assistant to associate professor levels included teaching skills, clinical skills, academic administration, developing educational programs, and various types of scholarship.[2] Faculty members without specific training in these areas face a steep learning curve before reaching peak efficiency.

In recent years, faculty development fellowships, which may be one or two years in length, have emerged as a model to improve the instructional, professional, and leadership skills of faculty.[3] They offer several advantages over episodic workshops and individual consultations. Fellowships provide a longitudinal learning experience in which participants have the time to conceive, develop, and pilot new educational interventions. They can apply what they are being taught. Fellowships allow time for the continual reinforcement of important principles. Finally, the extended time period allows fellows to develop meaningful relationships with faculty mentors and work with a cohort of peers who become future colleagues and collaborators.

As a response to the need for additional faculty development opportunities, the Office of Medical Education (OME) at the University of Hawaii John A. Burns School of Medicine (JABSOM) developed and piloted a Fellowship in Medical Education in the 2000-2001 academic year. This fellowship was designed to meet the needs of faculty at JABSOM and therefore its curriculum was aligned with the skills needed to serve effectively in the school's unique academic environment.

The content of the fellowship fell into three distinct units:

1)Curriculum Design
2)Teaching
3)Personal Effectiveness and Educational Leadership

1)Curriculum Design: Fellows learned how to develop new educational experiences in a scholarly way by:

A. Beginning to learn how to complete a literature review and curricular need assessment.

B. Learning the principles involved in writing goals that reflect real world performance, defining measurable objectives, and selecting realistic and feasible yet innovative instructional methods.

C. Learning ways to evaluate student performance and overall program effectiveness.

As a fellowship requirement, fellows must apply these principles to create and to pilot a new curriculum benefiting their home department, program, or unit.

2)Teaching: Fellows reviewed educational principles and adult learning theory by:

A. Practicing the application of instructional technology, like the use of presentation software and incorporating video in teaching.

B. Becoming familiar with the use of standardized patients in instruction and evaluation.

C. Learning techniques for teaching in the clinics and hospital wards.

D. Applying these principles in active teaching exercises conducted under the supervision of fellowship faculty who provide feedback and guidance.

In addition, fellows reviewed the theory behind problem-based learning (PBL) and PBL case-design. They served as a PBL tutor for a group of first or second-year students to learn firsthand how to tutor effectively and see how the theory behind PBL is practically applied.

3). **Personal Effectiveness and Educational Leadership**: Fellows learned practical skills in time management and organization, as well as principles of management, effectively facilitating change, and leadership as they apply to medical education.

Miscellaneous topics included, discussing the promotion process, developing teaching portfolios, improving performance through feedback, writing for publication, presenting scholarly projects, planning educational workshops, and learning elements of educational research.

The content was delivered over the course of the year in the form of weekly two-hour seminars. Assignments, including selected readings and the completion of task-specific workbooks and reflective essays, were completed between seminar sessions. Fellows devoted 25% of their time to fellowship activities that was negotiated in advance directly with the fellows' department chairman or unit director.

The response of the fellows in the pilot year of this program has been positive. They reported that the fellowship provided them with a better understanding of curriculum design, the principles underlying effective teaching, problem-based learning, and leadership. They suggested an improved mechanism for protecting their time to complete homework and additional sessions on teaching skills and educational research. The second class of this fellowship program is scheduled to begin this fall.

continued on p. 241

Introducing your friendly neighborhood investment specialists.



JOHN NOROEN



DORA JUSTO



EO ORONA



DIVINA GONZALES

If you're thinking about investing for your financial future, talk to the Investment Specialists at First Investment Center. We have the investments you need – stocks, bonds, mutual funds and annuities – to build a portfolio that achieves your retirement, college planning and other financial goals. Most importantly, our people have the experience and know-how to make sure that your portfolio is as unique as you are. For a no-obligation investment consultation with a First Investment Center Investment Specialist, stop by the First Investment Center desk conveniently located at your nearest First Hawaiian Bank branch or call 643-FUND (3863).

Investment Specialists at First Investment Center are registered representatives of BancWest Investment Services. Securities and annuities are offered through BancWest Investment Services, an independent registered broker/dealer. Member NASD/SIPC.

LOCATED IN FIRST HAWAIIAN BANK BRANCHES STATEWIDE ➤

FIRST INVESTMENT CENTER

Investment products are: Not a deposit; Not FDIC Insured; Not insured by any federal government agency; Not guaranteed by the bank or an affiliate; May go down in value.

Cancer Research Center Hotline

Local Studies Address a Previously Hidden SexuallyTransmitted Disease: Human Papillomavirus and Cervical Neoplasia

Marc T. Goodman, PhD, MPH
Professor, Cancer Etiology Program

This research was supported in part by U.S. Public Health Service grants R01-CA-77318 and R01-CA-55700 from the National Cancer Institute, NIH, Department of Health and Human Services.

Of the many triumphs in our fight against cancer, perhaps the best recognized has been the significant decrease in cervical cancer incidence worldwide through the use of the Papanicolau (Pap) screening test. As with many other public health successes, routine cytological screening and treatment of dysplasia and carcinoma *in situ* were performed without complete knowledge of the cause(s) or natural history of cervical malignancy. Our understanding of cervical neoplasia and the carcinogenic process has come a long way since the introduction of the Pap smear, and we now know that the majority of cervical cancer is caused by a single infectious agent, the human papillomavirus (HPV).[1] What we don't know is why only certain women develop cervical dysplasia or cervical cancer when HPV infection appears relatively common; nor why Asian/Pacific Islanders in Hawaii generally have lower incidence rates of HPV-associated squamous cell carcinomas than whites.[2]

In 1991, prompted by the availability of a new DNA amplifying technique, polymerase chain reaction (PCR), we initiated a case-control study of risk factors for pre-malignant changes in cervical epithelium. The specific aims of this five-year investigation, funded by the National Cancer Institute, were to identify viral and non-viral risk factors for cervical dysplasia, with a special emphasis on the interaction of HPV and diet. Eligible subjects included non-hysterectomized women, from 18 to 84 years of age, who were residents of Honolulu. Women who had been pregnant or lactating within 6 months of enrollment, who had a diagnosis of cervical abnormalities within the past three years, or who were clinic referrals were considered ineligible for study. Eligible cases were identified through the cytology logs of the participating clinics and included all women with a cytological classification of atypical squamous cells of undetermined significance (ASCUS) or squamous intraepithelial lesion (SIL) according to the Bethesda system.[3] Potentially eligible women were contacted by letter, followed by a telephone call, for consent to participate in the study before their return to the clinic for a follow-up examination and cervical smear. As part of the study, a colposcopy was performed and cervical cells were collected for HPV testing. Interview information was obtained from 214 women with biopsy-confirmed SIL and 254 women with a cytological diagnosis of ASCUS. Blood was drawn from 147 of the SIL cases and 185 of the ASCUS cases who completed interviews.

Controls were women with negative cytological smears attending the same clinics as the cases. Eligible women were selected from the admission logs of the participating clinics on a randomly selected day of the month. Potential controls were met at the clinics by one of the interviewers who explained the purpose of the study. An exfoliated cervical cell specimen was obtained at the time of the cervical cytological smear. Of the 271women with negative cytological results who were interviewed, 191further consented to have their blood drawn.

Participants were scheduled for a personal interview at their homes or other convenient location. A standardized questionnaire was used to elicit a detailed sexual and reproductive history, including age at first intercourse, number of sexual partners and methods of contraception, diet, a lifetime history of tobacco and alcohol use, and other demographic and lifestyle information. Fasting blood was used to determine plasma levels of a variety of nutrients. DNA was purified from peripheral blood leukocytes by SDS/proteinase K treatment and phenol/chloroform extraction for genetic analysis. Frozen cervical cell specimens were prepared for HPV-DNA detection by PCR amplification and dot blot hybridization of the amplicons.

Our findings suggest that high plasma concentrations of several antioxidants may reduce the risk of ASCUS[4] and cervical SIL.[5] We found an inverse dose-response of a-cryptoxanthin, total tocopherol, and a-tocopherol to the odds ratios for cervical SIL, after adjustment for HPV, tobacco smoking, and alcohol drinking. The risk of cervical dysplasia was reduced by about 70% among women in the highest compared with the lowest quartile of these micronutrients. We were also interested in the influence of dietary and plasma folate levels and related compounds on the risk of cervical dysplasia. Folate is essential to the synthesis of nucleotides, and low levels of folate have implications for cell replication, DNA excision and repair, and DNA hypomethylation. We found an inverse association of dietary,[6] but not plasma,[7] levels of folate, vitamin B_6, and vitamin B_{12}, on the risk of cervical dysplasia.

Other than diet, we have also explored several genetic hypotheses regarding the etiology of cervical dysplasia. Most recently, we examined the risk associated with a polymorphism in the methylenetetrahydrofolate reductase (*MTHFR*) gene.[6] A common variant of MTHFR, which catalyzes the synthesis of 5-methyltetrahydrofolate, results from a *677C6T* (*ala6val*) substitution in the gene. This variant has been shown to have reduced enzymatic activity and is associated with mild hyperhomocysteinemia. We found a positive, monotonic trend ($p = 0.02$) in the risk of cervical SIL associated with the number of variant *MTHFR T* alleles. Women with the heterozygous *CT* genotype had twice the risk of cervical SIL, and women with the homozygous *TT* genotype had almost three times the risk of SIL, compared to women who were homozygous for the wild type (*CC*) *MTHFR* genotype.

Tobacco smoking has been associated with the risk of cervical malignancy and SIL,[3] and nicotine, cotinine, and tobacco-specific nitrosamines have been detected in the cervical mucus of smokers.[8] Although the significance of these observations is unclear, DNA adducts of bulky aromatic compounds have been found with increased frequency in the cervical epithelium of smokers compared to nonsmokers,[9] providing biochemical evidence that smoking may be a cause of cervical cancer. Based on the significant positive association of tobacco smoking and cervical dysplasia in this investigation, we explored the hypothesis that genetic polymorphisms in

SOLUTIONS THAT SAVE

TIME & MONEY



Digital imaging of your documents is the advanced technology that will save your practice time and money.

- Indexing of documents provide digital search and retrieval capabilities
- Immediate access to patient files
- Quick and easy file sharing with other physicians
- Affordable and cost effective
- Rapid turnaround

SYNTERA
Solutions

BUILDERS OF NEXT GENERATION IMAGING SOLUTIONS & STORAGE AREA NETWORKS

Call us today at (808) 440-8508 or visit us at www.synterasolutions.com

Schering/Key Pharmaceutical

Claritin-D 12 Hour
(5 mg loratadine/120 mg pseudoephedrine sulfate, USP)
Extended Release Tablets

Claritin-D 24 Hour
(10 mg loratadine/240 mg pseudoephedrine sulfate, USP)
Extended Release Tablets

Claritin RediTabs
10 mg (loratadine rapidly-disintegrating tablets)

Claritin Syrup
(loratadine) 10 mg per 10 mL

Once-a-day nasonex (mometasone furoate monohydrate) Nasal Spray, 50 mcg

Claritin 10 mg (loratadine)

Tequin gatifloxacin

Schering **Velvet Agena-Chee**
Senior Sales Representative
Voice Mail (800) 782-2347
Box 3858

Schering **Donn keoki Arizumi**
Pharmaceutical Representative
Voice Mail (800) 544-5420
Box 8058

KEY **Shawn Brady**
Sales Representative
Telephone (808) 387-1409
Voice Mail (800) 554-5420
Box 1342
FAX (808) 373-1772
E-Mail shawn.brady@spcorp.com

Schering **Mark Buquoi**
Sales Representative
Telephone (808) 384-3862
Voice Mail (800) 544-5420
Box 9795
FAX (808) 841-6105

Schering **Dennis M. Hamamura**
Senior Pharmaceutical Rep.
Telephone (808) 671-0225
Voice Mail (800) 544-5420
Box 8774
FAX (808) 671-0817

KEY **Carol K. Honda**
Sales Representative
Voice Mail (800) 554-5420
Box 8322
FAX (808) 593-1776

Schering **Rachelle Hyde**
Sales Representative
District Trainer
Voice Mail (800) 782-2347
Box 3861

KEY **Caroline Perry**
Sales Representative
Voice Mail (800) 554-5420
Box 1274
E-Mail Caroline.perry@spcorp.com

Schering **Brian Souza**
District Account Representative
Telephone (808) 394-9475
Voice Mail (800) 554-5420
Box 6811
FAX (808) 394-9475
E-Mail brian.souza@spcorp.com

the cytochrome P450 1A1 (*CYP1A1*) and glutathione S-transferase classes mu and theta (*GSTM1* and *GSTT1*) genes promote dysplastic change by moderating the activation and detoxification of polycyclic hydrocarbons and other compounds that influence oxidative stress and DNA adduct formation. Women who were homozygous, but not heterozygous, for the *CYP1A1 MspI* variant allele were at significantly increased risk of cervical SIL compared to women who were homozygous for the wild-type allele.[10] Subjects with the *GSTM1* null genotype were also at (borderline) elevated risk of cervical SIL compared to women with the gene present. No difference in the risk of cervical disease was associated with the *GSTT1* variant genotype. The combination of the *CYP1A1* homozygous variant and the *GSTM1* null genotypes increased the odds ratio for cervical SIL to 5.1 (95% confidence interval: 1.3-20.8). It is possible that both the *CYP1A1 MspI* and *GSTM1* polymorphisms are susceptibility factors for early, premalignant changes in the cervical epithelium.

The recognition that HPV infection may be a necessary cause of cervical cancer has had a major impact on the epidemiological study of this disease. Of critical scientific and public health importance is whether the presently established risk factors for cervical dysplasia, such as tobacco smoking, are HPV cofactors that modify the progression of HPV infection to cancer or are simply correlated with viral infection. In collaboration with several local health care providers, we are presently engaged in another National Cancer Institute-funded project to establish a multiethnic cohort of 1,150 HPV-positive women for long-term follow-up to identify factors that influence the persistence or resolution of HPV infection of the cervix. The project aims are 1) to study the association of the dietary intake of fruits and vegetables and the plasma levels of carotenoids, tocopherols, and vitamin C with HPV persistence, and 2) to examine the role of HPV type, viral quantity, and multiple HPV infections in HPV persistence. The identification of these factors may provide insight into the natural history of HPV infection and may improve the ability to characterize women who are at greatest risk for developing HPV-associated neoplasia. A unique feature of this investigation is the development of a laboratory capability at the Cancer Research Center to perform HPV-testing. This is the only such laboratory in Hawaii and has been used increasingly by local physicians.

At present, we have enrolled over 1,000 local women of whom 210 were HPV-positive on the first or subsequent visits. We are asking for your help in enrolling additional volunteers. Participants in the study will be monitored through quarterly screening during a 3 year follow-up period. At each visit, a Pap smear is obtained, along with a blood specimen and collection of cervical cells for HPV testing. All participants will be reimbursed for their time and travel. Women at least 18 years old, not currently pregnant, and who have no prior history of hysterectomy are eligible for the study. Call Dr. Brenda Hernandez at (808)586-2987 for more information about participation in this study.

References

1. Schiffman MH, Bauer HM, Hoover RN, Glass AG, Cadell, DM, Rush BB, Scott DR, Sherman ME, Kurman RJ, Wacholder S, Stanton CK, Manos MM. Epidemiologic evidence showing that human papillomavirus infection causes most cervical intraepithelial neoplasia. *Journal of the National Cancer Institute*, 85:958-964, 1993.
2. Frisch M, Goodman MT. Human papillomavirus-associated cancers in Hawaii and the Mainland United States. *Cancer*, 88:1464-1469, 2000.
3. The Bethesda system for reporting cervical/vaginal cytologic diagnoses. NCI workshop: *Journal of the American Medical Association*, 262: 931-933, 1989.
4. Goodman MT, McDuffie K, Hernandez B, Hankin JH, Wilkens LR, Franke AA, Kuypers J, Kolonel LN, Kiviat N. The association of plasma micronutrients with the risk of cervical atypical squamous cells of undetermined significance (ASCUS). *Asian Pacific Journal of Cancer Prevention*, 1:339-347, 2000.
5. Goodman MT, Kiviat N, McDuffie K, Hankin JH, Hernandez B, Wilkens LR, Franke A, Kuypers J, Kolonel LN, Selhub J, Nakamura J, Ing G, Branch B, Bertram CC, Kamemoto L, Sharma S, Killeen J. The association of plasma micronutrients with the risk of cervical dysplasia in Hawaii. *Cancer Epidemiology, Biomarkers, and Prevention*, 7:537-544, 1998.
6. Unpublished data.
7. Goodman MT, McDuffie K, Hernandez B, Wilkens LR, Kiviat N, Kuypers J, Kolonel LN, Hankin JH, Selhub S. Case-Control study of plasma folate, homocysteine, vitamin B_{12}, and cysteine as markers of cervical dysplasia. *Cancer*, 89:376-382, 2000.
8. Prokopczyk B, Cox JE, Hoffmann D, Waggoner SE. Identification of tobacco-specific carcinogen in the cervical mucus of smokers and nonsmokers. *Journal of the National Cancer Institute*, 89: 868-873, 1997.
9. Simons AM, Phillips DH, Coleman DV. Damage to DNA in cervical epithelium related to smoking tobacco. *British Medical Journal*, 306:1444-1448, 1993.
10. Goodman MT, McDuffie K, Hernandez B, Bertram CC, Wilkens LR, Guo C, Seifried A, Killeen J, Le Marchand L. *CYP1A1*, *GSTM1*, and *GSTT1* polymorphisms and the risk of cervical squamous intraepithelial lesions in a multiethnic population. *Gynecologic Oncology*, 81:263-269, 2001.

New FROM THE
NATIONAL CANCER INSTITUTE

Cervical Cancer
Education Materials

for health professionals
and their patients

To order an information packet on Pap tests containing newly revised Pap test materials, call the NCI's Cancer Information Service at **1-800-4-CANCER** (1-800-422-6237). Persons with TTY equipment, dial 1-800-332-8615.

Visit NCI's Web site at **www.cancer.gov**

News and Notes Henry N. Yokoyama MD

Potpourri...

Lost in Translation...My six year old grandson called his mother from his friend Charlie's house and confessed he had broken a lamp when he threw a football in their living room.

"But mom", he said, brightening, "You don't have to worry about buying another one. Charlie's mother said it was irreplaceable."

— — — — — — — —

While working for the U.S. Census, I approached one home where I was greeted by two children. I introduced myself, explaining that I was a census taker and asked to see an adult. The older child ran to the door and shouted to the woman of the house. She hollered back, "Who is it?"
The youngster yelled, "It's the senseless under taker."

— — — — — — — —

The little boy I was babysitting showed us his family photo album. He pointed out a nice picture of his whole family and I complimented him on how handsome he looked. He shook his head and said, "My mom doesn't like it at all. She wants to have it blown up."

— — — — — — — —

Six guys were playing poker when Smith loses $500 on a single hand, clutches his chest and falls over dead.

Who's going to tell his wife, they all wonder. They drew straws and Anderson picks the short one. They tell him to be discrete and break it to her gently. "No problem," he says.

So he drives over to the Smith house and knocks on the door. When the wife answers he tells her, "Your husband just lost $500 playing poker." She screams and says, "tell him to drop dead!"

Anderson replies, "Okay, I'll tell him."

— — — — — — — —

Outhouse Medicine 101...

My neighbor and patient, Greg McAdam called to tell me his friend had a terrible accident and that he was very upset about the situation.

It seems his friend was smoking in his outhouse while doing a "major job". The friend threw his butt into the hole as he sat...a huge explosion occurred when the lit cigarette contacted the methane gas. Now Greg's friend is missing both testicles and most of his penis...

I was laughing so much I forgot to empathize with Greg's friend's loss.

Dr. Erica Golliatt

— — — — — — — —

Potpourri...

Frantic man on the phone: "My wife is pregnant and the contractions are two minutes apart..."

Doctor: "Is this her first son?"

Man: "No, you idiot! This is her husband."

— — — — — — — —

Patient: "I've lost my memory."
Doctor: "When did this happen?"
Patient: "When did what happen?"

— — — — — — — —

Patient: "I think I swallowed a bone."
Doctor: "Are you choking?"
Patient: "No, I really did."

— — — — — — — —

A vet felt sick and went to see our doctor. When the doctor started to take a history, she interrupted, "Look, I am a vet and I don't need to ask my patients these questions. I can tell what's wrong just by looking at them. Why can't you?"

"I can probably do that too", said the doctor. He looked her up and down, wrote out a prescription, which he handed to her and said, "Take these pills. If they don't work we will have to put you to sleep."

"Nostrum" by Simon Halley
Stitches Editor

— — — — — — — —

Two women were chatting in the doctor's waiting room.

"I want a baby more than anything in the world," said one. "But I guess it's impossible".

"I used to feel that way," said the other, "but then everything changed. That's why I am here. I am going to have a baby in 3 months."

"You must tell me what you did."

"I went to a faith healer."

"But I've tried that! My husband and I went to a faith healer for a year and nothing happened."

The other woman leaned over and whispered, "Next time go by yourself."

— — — — — — — —

President Bush and Vice President Cheney are having lunch at a restaurant. Cheney orders the "heart healthy salad". Bush leans over to the waitress and says, "Honey could I have a quickie?"

The waitress is horrified... "Mr. President," she says. "I thought your administration was bringing a new era of moral rectitude to the White House. Now I see what a false promise that was!" And she marches off in a huff.

Cheney leans over and says, "George, it's pronounced quiche."

— — — — — — — —

Placenta Previa: In the 1970's the presence of a father in the delivery room was a relatively uncommon occurrence. But on this occasion, a young Cockney father was invited to the birth of his first child. Dressed all in greens, he vacillated rushing from the head of the table to the stirrups.

The father was most appreciative of the medical attention accorded his wife, but asked to speak privately with the physician. Taking the senior resident to a corner of the delivery room he asked in all sincerity: "Well Doc, when can me and missus have sex again?"

The resident looked first at the father and then at the mother, still in stirrups and quietly informed him, "Sir we usually wait until the delivery of the placenta."

Dr. Arthur Atkinson

— — — — — — — —

Ten men and one woman are hanging on to a rope that extends down from a helicopter... The weight of 11 people is too much for the rope so the group decides one person has to jump off.

No one could decide who should let go until the woman volunteers. She gives a touching speech saying she will sacrifice her life to save the others because women are used to giving up things for their husbands and children.

When she finishes speaking, the men all start clapping...

Margaret Pitman

— — — — — — — —

Live & Learn:

One of my favorite patients was a four foot, 200 pound, hyperchondriac of German extraction. She would present herself with two shopping bags – one for her purse and the other for her meds.

Mrs. B. suffered from every disease in the book. Dr. S., her long-suffering and infinitely patient doctor tried valiantly to keep her out of harms way.

On the occasion of one of Dr. S's absences, Mrs. B. presented me with a request for a refill of the medication Sulfasaxazol. I asked her what exactly was Dr. S. treating.

"My infected prostate gland," came the reply.

"And is the medication working?" I made the mistake of asking.

"Yes, but it's not quite better so I want some more medication," she said. Based on my past medical experience with her, I knew better than to argue.

Mrs. B. was given her prescription refill and became the only woman in

medical history to be diagnosed and successfully treated for acute prostatitis! Oh the things they don't teach us in medical school.

Dr. William Fritz

Medical Tid Bits

Colon Cancer: Colorectal cancer is the third deadliest cancer in the U.S. with 103,000 cases diagnosed each year. Last April, the FDA ruled that CAMPTOSAR (in use since 1988 as a second line treatment) is potent enough in combination with other chemotherapeutic agents and can now be used as a first line therapy even in advanced cases…

— — — — — — — —

CPR: In heart attacks, standard CPR calls for alternative mouth to mouth resuscitation with chest compressions. A study of emergency medical technicians demonstrated that chest compressions alone may be sufficient. Survival rates were the same with or without chest compressions.

— — — — — — — —

Bated Breath: Steroid inhalers are the most common treatment for chronic bronchitis and emphysema. MDs say that steroids improve the shortness of breath and frequency of office visits, but fail to show progression of smoking-induced disease and do not show bone loss.

— — — — — — — —

Roto-Rooter: A study of 63,000 patients confirmed that angioplasties save more lives than clot busting drugs in heart attacks. The odds of dying after emergency angioplasties are 40% lower than after a round of clot busters. Caveat: The finding applies only to centers doing at least 50 or more angioplasties per year.

— — — — — — — —

Sugar Coating: Blood screening in the afternoon may miss half the cases of diabetes because sugar levels are normally below 125 mg/dl…

— — — — — — — —

Problem Pill: Women with a family history of breast cancer should avoid birth control pills manufactured before 1975 (which may increase the likelihood of breast cancer).

— — — — — — — —

Stiff Wind: Dr. Russell Stodd in his February column, "The Weathervane" warns: "If you eat beans with your Viagra you get a stiff wind"…

— — — — — — — —

Plavix and Aspirin: A major study at McMaster University in Ontario, Canada found that clopidogrel (Plavix) taken with aspirin reduced the risk of death, strokes, and new heart attacks by 20%…Experts say the drug will become routine treatment for the one million Americans suffering heart attacks each year…Dr. Christophore Cannon of Brigham and Women's Hospital in Boston says, "It is relatively cheap and has monster benefits"…

— — — — — — — —

Diabetes: The first fully automated monitor which analyzes blood and provides results has been approved by FDA…

— — — — — — — —

Estrogen: Two major studies have shown that taking estrogen long after menopause may not benefit the heart. A long term study may produce definitive answers in five years… Meanwhile women with high cholesterol should be on a low cholesterol diet and take cholesterol lowering drugs…

— — — — — — — —

Fatty Fish: Health experts are interested in a group of good fats (Omega-3 fatty acids) which lower triglycerides and decrease blood clots. The American Heart Association is recommending everyone eat two 3 oz. Servings of fatty fish each week.

— — — — — — — —

AIDS: The first known trials of vaccine against African strains of AIDS was begun in Kenya and England. The FDA has approved a new anti-HIV drug…

Alzheimer's: Testing was begun on drugs to clear plaques (a gamma secretose inhibitor) a compound that blocks the formation of the sticky plaques that gum up the neural connections.

— — — — — — — —

Good Cholesterol: New research shows that people with high HDL have a 47% reduced risk of strokes. In the U.S. each year, 600,000 patients stuffer strokes and is the country's third leading cause of death…

— — — — — — — —

Heart Warming: A team of scientists using high powered microscopes and new techniques has challenged the medical dogma that the heart cannot regenerate new muscle cells after a heart attack.

— — — — — — — —

Girls and Math: Girls seem to do more poorly in math than boys. The answer may be iron. A study of 4,500 children found that those with iron deficiency were twice as likely to score below average in math tests…8.7% of adolescent girls were iron deficient compared to 0.9% of boys…

— — — — — — — —

Less is Better: Menopausal women who find the cure for hot flashes and night sweats worse than the symptoms, take heart. A study has found that low dose hormone replacement therapy (0.3 to 0.45 mg of estrogen) is just as effective and having less side effects. Low dose HRT poses no increased uterine cancer risk and may reduce breast cancer risk.

— — — — — — — —

Herbal Warning: The FDA says Echinacea, ginkgo biloba and St. John's wort do not belong in our food…In the U.S. last year, the market research firm, Frost and Sullivan reported that consumers bought $700 million of drinks spiked with Echinacea, ginseng, and other herbs…

— — — — — — — —

Glowing Report: Angioplasty with stent works 90% of the time for a short term, at least. After six months, the artery closes up in one patient out of four…Now a new idea, blast the treated vessel, stent and all with radiation. Two preliminary studies suggest that the odds of a zapped vessel reclogging is reduced 90%…

— — — — — — — —

Statin Drug Benefits: A Scottish report shows that Pravachol reduces the risk of developing diabetes by 30%…A study of heart attack survivors on Pravachol reduces the odds of stroke 20%…

— — — — — — — —

Prozac Nation: Seventy percent of patients on Prozac do not feel the drug fully alleviates their symptoms. Half of the patients discontinue the drug because of side effects such as diminished sex drive; 1/5th of the patients skip doses and 1/2 stop the pill altogether.

— — — — — — — —

Glucosamine Sulfate: Dr. John Klippel, a medical director of the Arthritis Foundation reports that osteoarthritis strikes one in three Americans over age 63… He feels that the dietary supplement glucosamine sulfate taken regularly shows a 20% to 25% improvement in symptoms in three years.

— — — — — — — —

Tea Party: At a meeting of the American Society for Microbiology, volunteers swished either black tea or lukewarm water in their mouths…Conclusion: green tea and black tea prevent cavities as long as the tea is not sweetened with sugar or honey…

— — — — — — — —

Diabetes Blues: DIABETES CARE reports that diabetics are twice as likely to suffer from depression. Proper treatment of depression may actually improve diabetes. However, antidepressants, especially the older tricyclics may disrupt glucose control…

"Medical School Hotline," continued from p. 235

Faculty development is a symbolic representation of the value an institution places on both the quality of education it provides and the faculty that deliver it. The OME Fellowship in Medical Education is an investment in the future of our medical school, and a way to serve the needs of our faculty and students.

References

1. Griffith CH. Evidence-based Educational Practice: The Case of Faculty Development in Teaching. Am J Med 2000;109:749-752.
2. Beasley BW, Wright SM, Cofrancesco J, Babbot SF, Thomas PA, Bass EB. Promotion Criteria for Clinician-Educators in the United States and Canada. JAMA 1997;278(9):723-728.
3. Wilkerson L, Irby DM. Strategies for Improving Teaching Practices: A Comprehensive Approach to Faculty Development. Acad Med 1998;73(4):387-396.

Classified Notices

To place a classified notice:

HMA members.–Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.

Nonmembers.–Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Office Space

TWO OFFICE SPACES– 1,800 s.f. at 1360 S. Beretania Street. Zero CAM charge for 18 months. Easy access, convenient location. Lots of windows and reception area. Lots of pluses: kitchen, conference/meeting rooms. Contact Stephanie at 536-7702, ext. 100.

Until There's a Cure, There's the American Diabetes Association

Aloha Laboratories, Inc.
...When results count

CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

David M. Amberger, M.D.
Laboratory Directory

Phone: (808) 842-6600
Fax: (808) 848-0663
E-Mail: results@alohalabs.com
http://www.alohalabs.com



WE COLLECT PAST DUE ACCOUNTS

Only 25%* fee for Health Care Firms!
Why give up more!

Wood & Tait

HI Collection & Detective Agency
Staff on Kauai, Oahu, Maui, & Hawaii
http://www.woodtait.com

739-0433

jwood@woodtait.com

*Applies to accounts assigned during this promotion; no restrictions as to dollar size or age of accounts. Fee will increase to 50% if litigation or forwarding required; you will receive a contract.

The Weathervane Russell T. Stodd MD

It's Not Only Dangerous Out There, It's Even Scary In Here.
In St. Louis, at the Anheuser-Busch Eye Clinic, a disgruntled cataract surgery patient walked into the clinic without an appointment and confronted his eye surgeon. Because he was argumentative, the surgeon invited him into a private office where the patient brought out a handgun and shot the doctor in the face. When the surgeon tried to run, he was shot once more, this time in the back. When a technician came into the area, she was shot twice in the back. The patient calmly walked out, got in his car, and drove away. He was arrested shortly thereafter when he was pulled over on the road. The doctor and the technician both survived, and are expected to make a full recovery. A letter was on file from the patient saying he was happy with this treatment. Moreover, he could see well enough to aim a firearm and operate a motor vehicle, so the surgical outcome was adequate. What was the beef? Waiting time? Overbilling? No parking place?

The Search For Someone To Blame Is Always Successful.
As if the corpus of organized medicine wasn't already in tatters, now our own AMA Executive Vice-President, E. Ratcliffe Anderson, Jr. M.D. brought a law suit against our own AMA Board of Trustees, and in return, the board fired him. The law suit alleges that AMA board chairman, Dr. Timothy Flaherty, made disparaging comments about Anderson and his salary. Dr. Anderson claims this damaged his ability to lead the organization. He offered to accept a huge financial settlement of his contract and resign as CEO, but instead the board fired him. It is a vague, tortuous tale, but Anderson claims that attorney Michael Ile botched a real estate deal by agreeing to sell an AMA-owned property valued at $37 million, for $23.5 million, or about $13.5 million below fair market value. When he attempted to fire attorney Ile, Anderson claims the AMA board interfered, because the attorney had kept trustees insulated from the organization's controversial contract made with Sunbeam! AMA general counsel Kirk Johnson resigned over the Sunbeam fiasco, and Michael Ile was promoted to the post. He conducted an in-house investigation and absolved the board of trustees of any fault in the Sunbeam fiasco, effectively covering their collective assets. Anderson claims that court documents on file reveal that the board did indeed know, and that is why the board has now attacked and fired him. Board members claim that Anderson has been high-handed and made excessive financial demands. Moreover, at the last AMA House of Delegates he did his best to undermine the board, using questionable tactics, to get the House to sweep the board out of office. For the present, that effort failed. Is this dysfunctional leadership at the highest level or what? Give us dues payers a break! This internal back-biting sounds more like the Office of Hawaiian Affairs, and not like a professional organization such as "our" AMA.

We Learn From Experience That We Never Learn From Experience.
USA TODAY carried a critical article stating that five percent of 1.1 million patients that will have lasik surgery this year (50,000 people), will experience surgical complications that may be "life-altering" or "can't be fixed." Patients described complications ranging from temporary inflammation on through reduction in vision, diplopia or triplopia, and halos that inhibit reading, watching TV or driving at night. Many eye surgeons and others maintain that the complication rates of laser eye surgery are small and likely to decrease as surgeons and the industry learn more about which patients are the best candidates for lasik procedures. However, unhappy patients and some physicians say that ads calling the procedure as "easy and quick" give consumers dangerously unrealistic expectations. Dissatisfied patients have formed support groups in California and Florida, and the Association of Trial Lawyers of America has created a laser eye committee.

Half Of The Modern Drugs Could Well Be Thrown Out The Window, Except That The Birds Might Eat Them.
Genetic testing to select the best drug for a patient is a tantalizing scientific prospect. The reason is that about half the patients for whom a drug is prescribed, get little or no beneficial effect. In asthma, for example, drug effectiveness is highly variable, and genetic testing can reveal which compound to use for a given individual. The drug companies are severely threatened by the prospect, because it could result in patients requiring much less medication to control a disease. GlaxoSmithKline (maker of *Flovent*) says it has no intention of using the tests, nor letting anyone else develop them. Pfizer (*Lipitor*) is not eager to have any genetic testing done for lipid control either. A few academic centers are working on the technology with biotech companies that do not make drugs which could be affected by genetic testing. Obviously, for the major pharmaceutical firms this technology must be derailed. After all, ethical research should never be allowed to overrule profits.

A Man Can Go Back To His Birthplace, But He Cannot Go Back To His Youth.
Elderly drivers make up 12% of the population, but account for 18% of traffic fatalities. Doctors and licensing agencies are increasingly pressured to distinguish between safe and unsafe elderly drivers. A new test has been developed which researchers claim quickly identifies cognitive impairments that make some older drivers prone to traffic accidents. The test focuses on decision-making at various kinds of intersections, and drivers with Alzheimer's disease or other causes of dementia are easily confused. The test is described as highly practical, cost effective and takes only three to four minutes to administer. At this date, no state has adopted a broad screening program to identify impaired elderly drivers, although some states have laws which require a road test to renew a license after age 70 or 75. My sweet departed mother-in-law could still read the 20/20 line on the eye chart, but could get lost on the way to the bathroom. Be careful out there.

It's Not Hard To Die (In Holland) When The Details Of Living Get In The Way.
It may be the wave of the future, but one cannot help but experience a tingling of anxiety. In Holland, the government has now officially legalized euthanasia - long tolerated in the Netherlands - in the hope that now physicians will be more willing to actually report what has been going on. It is believed that about 400 people die each year with help from a physician, but it is further estimated that fully half the doctors who participate in such suicides fail to report the incidents. So, what is the real number — 400, 600, 1000? If that isn't a greasy slope, it will do until Dr. Kevorkian gets out of jail.

Give A Politician A Free Hand, And He Will Put It In Your Pocket.
In Alaska, the state senate passed a measure that would allow individual and group physicians to band together to negotiate fees and other contract terms when a plan's market share exceeds 15 %. (In Hawaii, HMSA's market share is almost 70%) Doctors would be prohibited from threatening retaliation such as boycotts or strikes, and no single negotiating group could comprise more than 30% of the doctors practicing in an area. Only Texas has a similar law on the books. Hopefully, the Hawaii Medical Association legislative committee will examine the legal language and consider similar relief from our medical shackles.

Sure Bet: Any Flight Delayed, Will Be Delayed Further.
After 45 minutes of delay on take-off, passengers on Delta flights get refreshments; after one hour Alaska Airlines offers free liquor and at 90 minutes, Alaska and United Airlines provide sustenance. Cheapo American Airlines travelers have to hang on for three hours of delay before getting a snack. What we all know is that flights are more crowded, delays are commonplace, pre-flight information about delays is rarely given, and now all airlines have even withdrawn security at baggage carousels so luggage theft is increasing. All this, combined with an air traffic control system that is already strained to capacity, is gathering Congressional attention. It is likely that soon Congress will study legislation providing rights for abused travelers.

ADDENDA
- ❖ The first person to be killed in a plane crash was Orville Wright in 1908.
- ❖ Homeless gay people don't have a closet to come out of.
- ❖ Jesus was born in a manger because Joseph's union had an HMO contract.
- ❖ When a holiday falls on Wednesday, you can get a five day week-end.

Aloha and keep the faith —rts■

Contents of this column do not necessarily reflect the opinion or position of the Hawaii Ophthalmological Society. Editorial comment is strictly that of the writer.



Checked your practice lately?

You strive to be the best practitioner you can. You stay current in your field. You spend countless hours checking on the health of your patients.

Who is checking on the health of your practice?

Is your business thriving? Should you understand the cash flow side of your business better than you do?

TeamPraxis manages the business side of medicine. We optimize your:

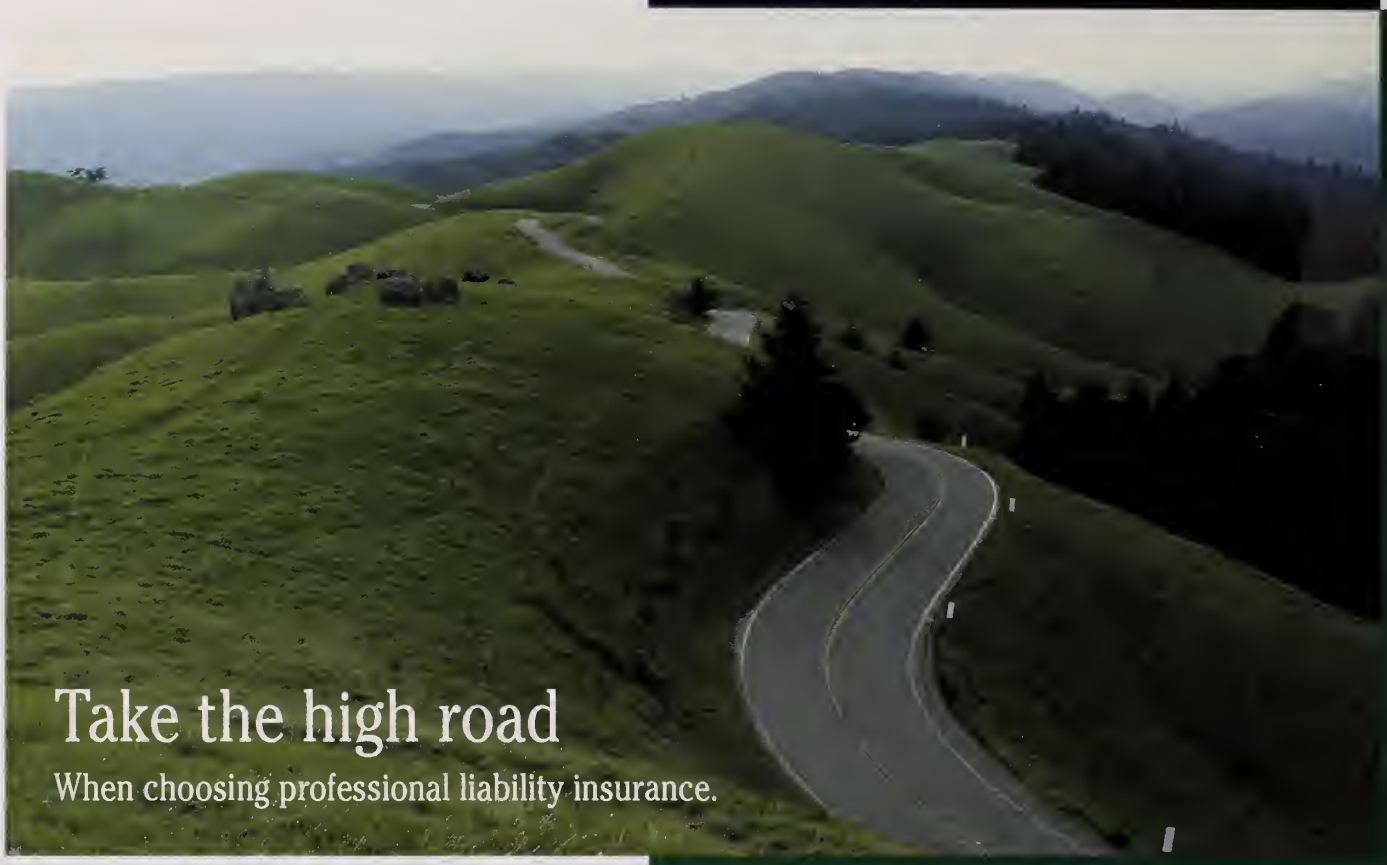
- ***CPT coding.***
- ***Patient billing and collection.***
- ***A/R management.***
- ***Cash flow.***
- ***Work flow management.***

Give us a call to get a free consultation.

TeamPraxis™
Your practice management team.

948-9343
Neighbor Islands, call
866-TPRAXIS
(866-877-2947)

www.TeamPraxis.com



NO RATE INCREASE IN 2001

MIEC

Medical Insurance Exchange of California

6250 Claremont Avenue
Oakland, California 94618
800-227-4527
www.miec.com

HAWAII CLAIMS OFFICE:
1360 South Beretania Street,
Honolulu, Hawaii 96814

Rated "A" (Excellent) by A.M. Best

Sponsored by the Hawaii Medical Association

THE SAFEST ROUTE IS
WITH AN EXPERIENCED GUIDE.

In Hawaii, that's MIEC. We are the West's first physician-owned, not-for-profit professional liability insurer. For more than a quarter century, we've protected doctors with financially secure coverage. We're also known for our unsurpassed, consistent track record of returning s to policyholders, sults permit. We've over $200 million.

ility insurance is a tionship. At MIEC, we take this commitment seriously.

Choose the genuine original, MIEC.

Hawaii medical journal
v. 60
no. 9
September 2001
Received on: 10-15-01
Brown University Library
SCI

HAWAII MEDICAL JOURNAL

October 2001 Volume 60, No. 10 ISSN: 0017-8594

1-SIZE
R15
H25x
SCI



Serials Dept
Sciences Library
Box I
Brown University
Providence, RI 02912-9127

Special Issue on Alternative Medicine

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA

Straub welcomes these outstanding new physicians

NEUROLOGY



Dr. Lynn Stuart Ashby is Board Certified in Neurology and Palliative Medicine. Special interests include neuro-oncology and general neurological care. Received Doctorate of Medicine at Northwestern University Medical School, Chicago, IL. Neurology residency at St. Joseph's Hospital and Medical Center, Phoenix, AZ. Fellowship in neuro-oncology at The Barrow Neurological Institute, Phoenix, AZ. She is also the Neuro-oncology Consultant for the Gamma Knife Center of the Pacific.

ORTHOPEDIC SURGERY



Dr. Michael Reyes' special interests include joint replacement surgery, arthroscopy/sports medicine, trauma and general orthopedics. Received Doctorate of Medicine from University of Pennsylvania School of Medicine. Residency at University of Southern California Department of Orthopedic Surgery. Fellowship in Adult Reconstruction/Joint Replacement Surgery at the University of Southern California Department of Orthopedic Surgery.

RADIOLOGY



Dr. Kryss Kojima is Board Certified in Diagnostic Radiology. Special interests include body imaging, magnetic resonance angiography, magnetic resonance coil design and computers. Received Doctorate of Medicine from Oregon Health Sciences University, School of Medicine. Diagnostic Radiology Residency at Oregon Health Sciences University. Fellowship in body imaging at Stanford University.

Straub

Partners in health

straubhealth.com

24-Hour Appointment Line: 522-4777

People know Pueblo for its...



Snazzy Web Site?
(www.pueblo.gsa.gov)



Cool Consumer
Information Catalog?



Easy-To-Remember
Phone Number?
(1-888-8 PUEBLO)



Famous Hot Salsa?

It's not just the salsa. In Pueblo, the free information is also hot. You can get it by dipping into the Consumer Information Center web site, www.pueblo.gsa.gov. Or calling toll-free 1-888-8 PUEBLO (1-888-878-3256) to order the free Catalog. Either way, you can spice up your life with ready-to-use government information on topics like investing for retirement, getting federal benefits, raising healthy children and buying surplus government property.

So remember, if you want information, mild, chunky or otherwise, Pueblo is all you need to know. Sorry, salsa not available through the Consumer Information Catalog or web site.

A public service of this publication and the Consumer Information Center of the U.S. General Services Administration.

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
John Breinich MLS, Satoru Izutsu PhD,
James Lumeng MD, Douglas G. Massey MD,
Myron E. Shirasu MD, Frank L. Tabrah MD,
Alfred D. Morris MD

Journal Staff
Editorial Assistant: Drake Chinen

Officers
President: Philip Hellreich MD
President-Elect: Gerald McKenna MD
Secretary: Calvin Wong MD
Treasurer: Paul DeMare MD
Past President: James Lumeng MD

County Presidents
Hawaii: David Camacho MD
Honolulu: William McKenzie MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Gardner Quarton MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 2001 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 226

Guest Editor
Bo Eklof MD, PhD 253

Guest Editorial
Ira D. Zunin MD, MPH, MBA 254

On a Wish and a Prayer: Healing Through Distant Intentionality
Paul Ka'ikena Pearsall PhD 255

Integrative Health and Healing: "Looking In" to "Left Out" Medicine
Paul Ka'ikena Pearsall PhD 257

Is There Any Evidence?
Frank L. Tabrah MD 259

Stroke and Complementary Medicine
Jack Burke ND, LAc 261

Integrative Medicine Approach to Obesity and Diabetes
Tery T. Shintani MD, JD, MPH 262

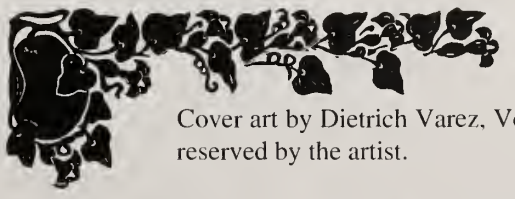
Complementary and Alternative Healing in Paradise: The State of the State
Ira D. Zunin MD, MPH, MBA 264

Medical School Hotline
Kamal Masaki MD 266

Cancer Research Center Hotline
Gertraud Maskarinec MD, PhD 267

Classified Notices 269

Weathervane
Russell T. Stodd MD 270



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

Heihei Kukini

Kukini means "runner" in Hawaiian. Betting on foot races was much in favor on old Hawaii.

Editorial

Norman Goldstein MD
Editor, Hawaii Medical Journal

This month begins a series of special issues on "Alternative Medicine." The Straub Foundation sponsored several seminars for physicians, other health providers and the public.

Integrative Medicine: Research in Hawaii during September 2000 at the Hilton Hawaiian Village.

Complementary and Alternative Medicine: Practical Applications and Evaluations on the Island of Kauai during October 2000.

Healing in Paradise: Integrating Alternatives in Health, a public program presented at the Hawaii Convention Center during November 2000.

The Hawaii Medical Journal is publishing these proceedings in collaboration with the Straub Foundation. The manuscripts will continue in next month's Journal.

As testiment to the interest in Complementary and Alternative Medicine, the University of Hawaii School of Medicine is planning to start a CAM Department. Thanks to Dean Ed Cadman for his suggestion to implement the first CAM Department in U.S. medical school.

The Hawaii Medical Library subscribes to the Journal of Alternative and Complementary Medicine and several exellent general texts on CAM, listed below.

The Arthritis Foundation has a Guide to Alternative Therapy with nearly 90 different types of treatments and therapies (www.arthritis.org). Volume III of the Physicians Guide to Alternative Medicine has just been published by American Health Consultants of Atlanta, GA (www.ahcpub.com).

Changes are occurring rapidly in medicine today through the World Wide Web; telemedicine; imaging techniques; artificial organs, cloning; and stem cell research among others. As physicians, we must be alert to modern technology as well as alternative medicine. For better or worse, forty percent of our patients are now using some form of CAM. Being current with these developments is increasingly important.

COHEN, MICHAEL H. *Complementary & Alternative Medicine: Legal Boundaries and Regulatory Perspectives.* Baltimore, MD.: John Hopkins University Press, c1998. WB 890 C678c 1998

FONTANAROSA, PHIL B., ED. *Alternative Medicine: An Objective Assessment (JAMA and Archives Journals).* Chicago, Ill.: American Medical Association, c2000. WB 890 A4665 2000

FREEMAN, LYN W., AND LAWLIS, G. FRANK., EDS. *Mosby's Complementary & Alternative Medicine: A Research-Based Approach.* St. Louis, MO.: Mosby, c2001. WB 890 F855m 2001

GORDON, RENA J. [and others]. *Alternative Therapies: Expanding Options in Health Care.* New York, NY: Springer Pub. Co., c1998. WB 890 A4662 1998.

JONAS, WAYNE B., AND LEVIN, JEFFREYS., EDS. *Essentials of Complementary and Alternative Medicine.* Philadelphia, PA.: Lippincott Williams & Wilkins, c1999. WB 890 E78 1999.

JOURNALS
Journals of Alternative and Complementary Medicine. Available at HML.

Medical Journals and Advertisers It's a Great Team and We Will Continue to Play the Game

At a recent annual meeting of the International Committee of Medical Journal Editors, new guidelines about Journal advertisements and editorials supporting these policies were proposed. The proposals are to be published in September in the New England Journal of Medicine, Lancet, Journal of the American Medical Association, Annals of Internal Medicine as well as the National Society Journals of Canada, the Netherlands, Norway, Australia and New Zealand.

Essentially, the new rules will require that the authors of studies have control over the content of reports submitted for Journal publication, and that the authors have access to all data available to the pharmaceutical companies.

Most Hawaii physicians at least know the procedures, even if they themselves may not have been directly involved with pharmaceutical company sponsored research. Drug companies contract with physicians or medical institutions to perform clinical or basic science studies. The physician is to be independent of the sponsor and submit conclusions, even if it is not necessarily in the company's financial interest. Frequently the drug company helps conduct the study, compiles the research in vast computer databases and may even help write about the findings for publication.

The Committee of Medical Journal Editors is concerned about studies conducted and submitted when the pharmaceutical company does not provide the authors complete access to the data. These are not frequent situations. Most reputable drug companies want "the whole truth and nothing but the truth" in their reports and sponsored publications.

There have been only three or four well-known egregious examples and some less well-known cases in which companies tried to block publication of unfavorable studies or tried to put a positive spin on the results, according to Frank Davidoff, M.D., past editor for the Annals of Internal Medicine. These rare instances do, unfortunately, hit the media headlines and TV news reports, but the vast majority of pharmaceutical sponsors are ethical, honest, and want accurate reports. They are also very aware that the FDA is closely observing their actions.

Medical journals need the pharmaceutical industry. We cannot publish peer-reviewed top quality manuscripts without the support of drug companies. And the drug companies need honest evaluations and reports by respected, authoritative, established researchers and practicing physicians.



Please see brief summary of prescribing information on the following page.

Fujisawa Healthcare, Inc.

©2001 Fujisawa Healthcare, Inc. PT127 6/01

BRIEF SUMMARY

47002/Issued: December 2000

Protopic®
(tacrolimus)

Ointment 0.03%
Ointment 0.1%

FOR DERMATOLOGIC USE ONLY
NOT FOR OPHTHALMIC USE

INDICATIONS AND USAGE:
PROTOPIC Ointment, both 0.03% and 0.1% for adults, and only 0.03% for children aged 2 to 15 years, is indicated for short-term and intermittent long-term therapy in the treatment of patients with moderate to severe atopic dermatitis in whom the use of alternative, conventional therapies are deemed inadvisable because of potential risks, or in the treatment of patients who are not adequately responsive to or are intolerant of alternative, conventional therapies.

CONTRAINDICATIONS:
PROTOPIC Ointment is contraindicated in patients with a history of hypersensitivity to tacrolimus or any other component of the preparation.

PRECAUTIONS:
General

Studies have not evaluated the safety and efficacy of PROTOPIC Ointment in the treatment of clinically infected atopic dermatitis. Before commencing treatment with PROTOPIC Ointment, clinical infections at treatment sites should be cleared.

While patients with atopic dermatitis are predisposed to superficial skin infections including eczema herpeticum (Kaposi's varicelliform eruption), treatment with PROTOPIC Ointment may be associated with an increased risk of varicella zoster virus infection (chicken pox or shingles), herpes simplex virus infection, or eczema herpeticum. In the presence of these infections, the balance of risks and benefits associated with PROTOPIC Ointment use should be evaluated.

In clinical studies, 33 cases of lymphadenopathy (0.8%) were reported and were usually related to infections (particularly of the skin) and noted to resolve upon appropriate antibiotic therapy. Of these 33 cases, the majority had either a clear etiology or were known to resolve. Transplant patients receiving immunosuppressive regimens (e.g., systemic tacrolimus) are at increased risk for developing lymphoma; therefore, patients who receive PROTOPIC Ointment and who develop lymphadenopathy should have the etiology of their lymphadenopathy investigated. In the absence of a clear etiology for the lymphadenopathy, or in the presence of acute infectious mononucleosis, discontinuation of PROTOPIC Ointment should be considered. Patients who develop lymphadenopathy should be monitored to ensure that the lymphadenopathy resolves.

The enhancement of ultraviolet carcinogenicity is not necessarily dependent on phototoxic mechanisms. Despite the absence of observed phototoxicity in humans (see **ADVERSE REACTIONS**), PROTOPIC Ointment shortened the time to skin tumor formation in an animal photocarcinogenicity study (see **Carcinogenesis, Mutagenesis, Impairment of Fertility**). Therefore, it is prudent for patients to minimize or avoid natural or artificial sunlight exposure.

The use of PROTOPIC Ointment may cause local symptoms such as skin burning (burning sensation, stinging, soreness) or pruritus. Localized symptoms are most common during the first few days of PROTOPIC Ointment application and typically improve as the lesions of atopic dermatitis heal. With PROTOPIC Ointment 0.1%, 90% of the skin burning events had a duration between 2 minutes and 3 hours (median 15 minutes). Ninety percent of the pruritus events had a duration between 3 minutes and 10 hours (median 20 minutes).
The use of PROTOPIC Ointment in patients with Netherton's Syndrome is not recommended due to the potential for increased systemic absorption of tacrolimus. The safety of PROTOPIC Ointment has not been established in patients with generalized erythroderma.

Information for Patients
(See patient package insert)
Patients using PROTOPIC Ointment should receive the following information and instructions:

1. Patients should use PROTOPIC Ointment as directed by the physician. PROTOPIC Ointment is for external use only. As with any topical medication, patients or caregivers should wash hands after application if hands are not an area for treatment.
2. Patients should minimize or avoid exposure to natural or artificial sunlight (tanning beds or UVA/B treatment) while using PROTOPIC Ointment.
3. Patients should not use this medication for any disorder other than that for which it was prescribed.
4. Patients should report any signs of adverse reactions to their physician.
5. Before applying PROTOPIC Ointment after a bath or shower, be sure your skin is completely dry.

Drug Interactions
Formal topical drug interaction studies with PROTOPIC Ointment have not been conducted. Based on its minimal extent of absorption, interactions of PROTOPIC Ointment with systemically administered drugs are unlikely to occur but cannot be ruled out. The concomitant administration of known CYP3A4 inhibitors in patients with widespread and/or erythrodermic disease should be done with caution. Some examples of such drugs are erythromycin, itraconazole, ketoconazole, fluconazole, calcium channel blockers and cimetidine.

Carcinogenesis, Mutagenesis, Impairment of Fertility
No evidence of genotoxicity was seen in bacterial (*Salmonella* and *E. coli*) or mammalian (Chinese hamster lung-derived cells) *in vitro* assays of mutagenicity, the *in vitro* CHO/HGPRT assay of mutagenicity, or *in vivo* clastogenicity assays performed in mice. Tacrolimus did not cause unscheduled DNA synthesis in rodent hepatocytes.

Reproductive toxicology studies were not performed with topical tacrolimus.

Pregnancy:
Teratogenic Effects: Pregnancy Category C
There are no adequate and well-controlled studies of topically administered tacrolimus in pregnant women. The experience with PROTOPIC Ointment when used by pregnant women is too limited to permit assessment of the safety of its use during pregnancy.

There are no adequate and well-controlled studies of systemically administered tacrolimus in pregnant women. Tacrolimus is transferred across the placenta. The use of systemically administered tacrolimus during pregnancy has been associated with neonatal hyperkalemia and renal dysfunction. PROTOPIC Ointment should be used during pregnancy only if the potential benefit to the mother justifies a potential risk to the fetus.

Nursing Mothers
Although systemic absorption of tacrolimus following topical applications of PROTOPIC Ointment is minimal relative to systemic administration, it is known that tacrolimus is excreted in human milk. Because of the potential for serious adverse reactions in nursing infants from tacrolimus, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.

Pediatric Use
PROTOPIC Ointment 0.03% may be used in pediatric patients 2 years of age and older. Two phase 3 pediatric studies were conducted involving 606 patients 2-15 years of age: one 12-week randomized vehicle-controlled study and one open-label, 1 year, long-term safety study. Three hundred and thirty (330) of these patients were 2 to 6 years of age.

The most common adverse events associated with PROTOPIC Ointment application in pediatric patients were skin burning and pruritus (see **ADVERSE REACTIONS**). In addition to skin burning and pruritus, the less common events (< 5%) of varicella zoster (mostly chicken pox), and vesiculobullous rash were more frequent in patients treated with PROTOPIC Ointment 0.03% compared to vehicle. In the long-term 1 year safety study involving 255 pediatric patients using PROTOPIC Ointment, the incidence of adverse events, including infections, did not increase with increased duration of study drug exposure or amount of ointment used. In 491 pediatric patients treated with PROTOPIC Ointment, 3(0.6%) developed eczema herpeticum. Since the safety and efficacy of PROTOPIC Ointment have not been established in pediatric patients below 2 years of age, its use in this age group is not recommended.

Geriatric Use
Twenty-five (25) patients ≥ 65 years old received PROTOPIC Ointment in phase 3 studies. The adverse event profile for these patients was consistent with that for other adult patients.

ADVERSE REACTIONS:

No phototoxicity and no photoallergenicity was detected in clinical studies of 12 and 216 normal volunteers, respectively. One out of 198 normal volunteers showed evidence of sensitization in a contact sensitization study.

In three randomized vehicle-controlled studies and two long-term safety studies, 655 and 571 patients respectively, were treated with PROTOPIC Ointment.

The following table depicts the adjusted incidence of adverse events pooled across the 3 identically designed 12- week studies for patients in vehicle, PROTOPIC Ointment 0.03%, and PROTOPIC Ointment 0.1% treatment groups, and the unadjusted incidence of adverse events in two one year long-term safety studies, regardless of relationship to study drug.

Incidence Of Treatment Emergent Adverse Events

	12-Week, Randomized, Double-Blind, Phase 3 Studies 12-Week Adjusted Incidence Rate (%)					Open-Label Studies (up to 1 year) 0.1% Tacrolimus Ointment Incidence(%)	
	Adult			Pediatric		Adult	Pediatric
	Vehicle n=212	0.03% Tacrolimus Ointment n=210	0.1% Tacrolimus Ointment n=209	Vehicle n=116	0.03% Tacrolimus Ointment n=118	n=316	n=255
Skin Burning‡	26	46	58	29	43	47	26
Pruritus†	37	46	46	27	41	25	25
Flu-like symptoms‡	19	23	31	25	28	22	35
Allergic Reaction	8	12	6	8	4	22	15
Skin Erythema	20	25	28	13	12	12	9
Headache†	11	20	19	8	5	10	18
Skin Infection	11	12	5	14	10	11	11
Fever	4	4	1	13	21	2	18
Infection	1	1	2	9	7	14	8
Cough Increased	2	1	1	14	18	3	15
Asthma	4	6	4	6	6	5	16
Herpes Simplex	4	4	4	2	0	12	5
Eczema Herpeticum	0	1	1	0	2	2	0
Pharyngitis	3	3	4	11	6	5	10
Accidental Injury	4	3	6	3	6	4	12
Pustular Rash	2	3	4	3	2	6	8
Folliculitis†	1	6	4	0	2	11	2
Rhinitis	4	3	2	2	6	5	5
Otitis Media	4	0	1	6	12	1	7
Sinusitis†	1	4	2	8	3	3	7
Diarrhea	3	3	4	2	5	4	6
Urticaria	3	3	6	1	1	5	5
Lack of Drug Effect	1	1	0	1	1	10	2
Bronchitis	0	2	2	3	3	3	6
Vomiting	0	1	1	7	6	1	5
Maculopapular Rash	2	2	2	3	0	4	3
Rash†	1	5	2	4	2	2	5
Abdominal Pain	3	1	1	2	3	1	5
Fungal Dermatitis	0	2	1	3	0	2	6
Gastroenteritis	1	2	2	3	0	4	2
Alcohol Intolerance†	0	3	7	0	0	6	0
Acne†	2	4	7	1	0	2	4
Sunburn	1	2	1	0	0	4	4
Skin Disorder	2	2	1	1	4	1	4
Conjunctivitis	0	2	2	2	1	4	2
Pain	1	2	1	0	1	4	3
Vesiculobullous Rash†	3	3	2	0	4	2	2
Lymphadenopathy	2	2	1	0	3	2	3
Nausea	4	3	2	0	1	1	2
Skin Tingling†	2	3	8	1	2	2	1
Face Edema	2	2	1	2	1	3	1
Dyspepsia†	1	1	4	0	0	1	4
Dry Skin	7	3	3	0	1	0	1
Hyperesthesia†	1	3	7	0	0	3	0
Skin Neoplasm Benign##	1	1	1	0	0	2	3
Back Pain†	0	2	2	1	1	3	1
Peripheral Edema	2	4	3	0	0	2	1
Varicella Zoster/ Herpes Zoster#‡	0	1	0	0	5	1	3
Contact Dermatitis	1	3	3	3	4	1	1
Asthenia	1	2	3	0	0	2	1
Pneumonia	0	1	1	2	0	1	2
Eczema	2	2	2	0	0	3	0
Insomnia	3	4	3	1	1	1	0
Exfoliative Dermatitis	3	3	1	0	0	0	2
Dysmenorrhea	2	4	4	0	0	0	2
Periodontal Abscess	1	0	1	0	0	3	0
Myalgia†	0	3	2	0	0	1	0
Cyst†	0	1	3	0	0	0	0

† May be reasonably associated with the use of this drug product

‡ Four cases of chicken pox in the pediatric 12-week study; 1 case of "zoster of the lip" in the adult 12-week study; 7 cases of chicken pox and 1 case of shingles in the open-label pediatric study; 2 cases of herpes zoster in the open-label adult study

Generally "warts"

Other adverse events which occurred at an incidence greater than or equal to 1% in any clinical study include: alopecia, ALT or AST increased, anaphylactoid reaction, angina pectoris, angioedema, anorexia, anxiety, arrhythmia, arthralgia, arthritis, bilirubinemia, breast pain, cellulitis, cerebrovascular accident, cheilitis, chills, constipation, creatinine increased, dehydration, depression, dizziness, dyspnea, ear pain, ecchymosis, edema, epistaxis, exacerbation of untreated area, eye disorder, eye pain, furunculosis, gastritis, hernia, hyperglycemia, hypertension, hypoglycemia, hypoxia, laryngitis, leukocytosis, leukopenia, liver function tests abnormal, lung disorder, malaise, migraine, neck pain, neuritis, palpitations, paresthesia, peripheral vascular disorder, photosensitivity reaction, procedural complication, routine procedure, skin discoloration, sweating, taste perversion, tooth disorder, unintended pregnancy, vaginal moniliasis, vasodilatation, and vertigo.

OVERDOSAGE:
PROTOPIC Ointment is not for oral use. Oral ingestion of PROTOPIC Ointment may lead to adverse effects associated with systemic administration of tacrolimus. If oral ingestion occurs, medical advice should be sought.

DOSAGE AND ADMINISTRATION:
ADULT
PROTOPIC Ointment 0.03% and 0.1%

Apply a thin layer of PROTOPIC Ointment 0.03% or 0.1% to the affected skin areas twice daily and rub in gently and completely. Treatment should be continued for one week after clearing of signs and symptoms of atopic dermatitis.

The safety of PROTOPIC Ointment under occlusion which may promote systemic exposure, has not been evaluated. **PROTOPIC Ointment 0.03% and 0.1% should not be used with occlusive dressings.**

PEDIATRIC
PROTOPIC Ointment 0.03%

Apply a thin layer of PROTOPIC Ointment 0.03% to the affected skin areas twice daily and rub in gently and completely. Treatment should be continued for one week after clearing of signs and symptoms of atopic dermatitis. The safety of PROTOPIC Ointment under occlusion, which may promote systemic exposure, has not been evaluated. **PROTOPIC Ointment 0.03% should not be used with occlusive dressings.**

Rx only

Fujisawa Healthcare, Inc.
Deerfield, IL 60015-2548
47002/Issued: December 2000

Fujisawa Healthcare, Inc.

©2001 Fujisawa Healthcare, Inc. PT127 6/01

Guest Editor

Bo Eklof MD, PhD,
Medical Director, Straub Foundation



The collaboration between Hawaii Medical Journal and the Straub Foundation continues in this issue. The Editor, Norman Goldstein, shares our view on the importance of public education and the distribution of knowledge to a wider population. Dr. Goldstein published the Third Pacific Vascular Symposium on Venous Disease that the Straub Foundation organized, in three issues of HMJ April through June 2000. The session on air travel related venous thromboembolism was republished in the prestigious Cardiovascular Surgery journal last April.

An independent 501(c)(3) public charity, the Straub Foundation is dedicated to improving the health of Hawaii's people through research and education. Building today for our health tomorrow, the Straub Foundation establishes programs that most benefit the Hawaii community it serves.

Focusing on clinical research and pharmaceutical trials, the majority of projects involve patients in studies and experiments intended to result in better and more effective ways of managing health care needs.

The Foundation's education activities focus on delivering information to promote community awareness and healthier living. Since 1994, the Foundation has organized free meetings for the public on important health issues such as diabetes, aging, stroke, asthma, sun and skin, prevention and screening of various diseases, and varicose veins.

In concert with the Hawaii State Consortium for Integrative Health Care, the Straub Foundation organized the first "Healing in Paradise: Integrating Alternatives in Health", a free public meeting held on Saturday, November 4, 2000 at the Hawaii Convention Center which attracted more than 1,000 participants. Kahuna Kawaikapuokalani K. Hewett, Paul Ka'ikena Pearsall and the Kuhai Halau o Kawaikapuokalani Pa'Olapa Kahiko opened the meeting with a poignant Hawaiian ceremony.

Nine local experts presented an interesting complement of topics, such as "Integrative Health and Healing: `Looking In' to `Left Out' Medicine", "Overview of Chinese Medicine", "Overview of Hawaiian Medicine", the "Practice of Integrative Medicine in Hawaii"; "Complementary/Alternative Medicine and its Role in Common Diseases: Heart Disease, Obesity with Diabetes Mellitus, Complementary Approaches to the Treatment and Prevention of Strokes, and Arthritis", and "Is There Any Scientific Evidence?"

Participants spent nearly two hours experiencing some of the 15 hands-on workshops offered, including acupuncture and oriental medicine; chiropractic; energy healing, healing touch, Ho'oponopono, Lomilomi and La'au Lapa'au; magnetic therapy; massage; Qi Gong/Tai Chi; yoga; and more.

The Hawaii State Consortium for Integrative Health Care and the Straub Foundation are not endorsing any of the alternative medicine therapies presented in this issue and advise participants to consult with their personal physician regarding the therapies.

I have seen and felt the enthusiasm and the never ending questions at these meetings, and I realize the need and the demand from the public for more health information. It is satisfying to see 1,000 participants at the meetings, but this up-to-date health information should be delivered to many other Hawaii residents.

This is the reason Straub Foundation, in collaboration with Olelo, has commenced a health series, "Health in Paradise", with Dr. S. Kalani Brady (the popular TV doctor from Straub) as the Moderator every Saturday evening from 7:00 to 7:30 p.m. on Olelo, Channel 52.

Next month, the Foundation's major symposium, "Eve in Paradise: Controversies in Women's Health" will be held at the Renaissance Ilikai Waikiki Hotel. Six mainland guest lecturers will join the local experts for a two-day professional meeting on November 15 and 16, 2001 and one-day free public meeting on Saturday, November 17, 2001.

We are also working with the Hawaii State Consortium for Integrative Health Care to plan the second "Healing in Paradise" public symposium on Saturday, April 13, 2002.

To share this health information to a wider audience, we will plan to videotape the "Eve in Paradise" and "Healing in Paradise" public meetings so that both programs can be televised on Olelo at a later date.



Guest Editorial

Ira D. Zunin MD, MPH, MBA
Chairman and President
Hawaii Sate Consortium for Integrative Health Care



On November 4, 2000, in concert with the Straub Foundation, The Hawaii State Consortium for Integrative Health Care sponsored Healing in Paradise: A Public Symposium on Integrating Alternatives in Health. The mission of the Consortium is to establish and maintain an ongoing collaborative effort among stakeholders in health care within the State of Hawaii for the advancement of wellness and integrative medicine. The vision of the Consortium is that the people of Hawaii will enjoy increased and timely access to all forms of health care that may be of benefit, including traditional systems of healing, with appropriate scopes and standards of practice, on the basis of research that at least demonstrates safety and with reimbursement that is viable for patient, provider and payer.

During Phase I, the Consortium has focused on assembling institutional charter members from among Hawaii's conventional medicine stakeholders including our major hospitals and insurance companies and the University of Hawaii. The Consortium has also formed a Complementary and Alternative Medicine Professions branch with separate committees for naturopathy, chiropractic, acupuncture, massage and yoga. Another committee focused on the role of the mind in the cause and course of illness is under development.

Initial efforts have been dedicated to support research and education both public and professional. The Consortium is not a political organization. Rather it strives to provide a forum on common ground while respecting proprietary issues and differences among professional guilds.

During 2000, the Consortium supported three major events: These events were made possible through the joint efforts of stakeholder members and generous support from the Governor's office. In September a Research Investigators Meeting was held at the Hilton Hawaiian Village. Local investigators including both comple-mentary and conventional practitioners presented original work. The second event occurred in October in Kauai: Complementary and Alternative Medicine: Practical Applications and Evaluations. Presenting at this conference were top professors from Harvard and Stanford and other industry leaders from the U.S. mainland and Asia.

The final event of 2000, Healing in Paradise was held at the new convention center. Kahuna Kawaikapuokalani K. Hewett, Paul Ka'ikena Pearsall and the Kuhai Halau o Kawaikapuokalani Pa'Olapa Kahiko began the day with a heartful Hawaiian opening ceremony. Despite a 7:30 registration time on a Saturday the hall was packed with over a thousand people. There was a remarkable stillness in the air as the participants listened intently to speakers throughout the morning. Following the lecture format, participants attended approximately fifteen workshops that featured an opportunity to gain first hand experience in disciplines such as tai chi, la'au lapaau, healing touch, yoga, massage, etc.

During the morning session, the audience erupted in applause when Dean Cadman announced his intention to support responsible research and education in integrative health care at the John A. Burns School of Medicine. Most recently he has enlisted the support of the Consortium in developing a Department of Integrative Medicine at JABSOM. To this end, in March, the Consortium dedicated its first formal event for 2001 to a half-day planning meeting for the new department.

Successful integration of complementary and alternative modalities requires a new set of tools for physicians and CAM providers. Physicians in training and practice will benefit from a solid fund of knowledge on CAM modalities, and understanding of their safety and efficacy, and additional information on the educational background and scope of practice of the CAM providers. Training is also required on how to manage patients who seek alternatives and how to utilize the integrative specialty consult performed by physicians with appropriate training. On the other hand, the ability of CAM providers to integrate successfully will be enhanced by training on professional communications, risk management, practice management and a knowledge base in research.

With the momentum of the Hawaii State Consortium for Integrative Health Care, and a firm commitment from the School of Medicine to research and education in this area, the time is now ripe to plan a major integrative clinical research facility to fine tune models for care. This, combined with potential partnership from leading academic institutions in Asia and the U.S. mainland forms the basis for the State of Hawaii to become a key center of investigation under the National Institutes of Health, Center for Complementary and Alternative Medicine and ultimately a hub for international activities in this emerging field.

Until there's a cure, there's the American Diabetes Association.

Until there's a cure, there's the American Diabetes Association.

On a Wish and a Prayer: Healing Through Distant Intentionality

Paul Ka'ikena Pearsall, PhD
President and CEO, Ho'ala Hou; Clinical Professor, University of Hawaii at Manoa



"Pythagora said that the most divine art was that of healing. And if the healing art is most divine, it must occupy itself with the soul as well as with the body; for no creature can be sound so long as the higher part in it is sickly."

Apoolonius of Tynana

Be careful what you wish for. Recent research is indicating that these words go beyond superstition. While no scientist knows why, evidence from their carefully controlled studies indicates that the mind of one person can engage in "action at a distance" to bring about healthful changes in someone else.[1] Physician Daniel Benor has written a four-volume work titled Healing Research which sites nearly 150 studies related to prayer and intentionality, many of which meet the highest scientific standards.[2] Over half of these studies show statistically significant results of the power of prayer. Modern science is learning what ancient healers knew all along; prayer works.

The positive effects of prayer yielded in experiments cannot be explained by known physiological processes and they go beyond the laws of old Newtonian physics.[3] The idea that some form of energy is "sent" and "received" does not hold up to careful scrutiny. In the studies on distant healing, whatever is happening seems independent of time, the "energy" does not fade away with increasing distance, and it cannot be shielded by any known substance. All of the conventional forms of energy we do know about are limited by these conditions, but not the unique "energy" or process of prayerful intent.

While most spiritual healing traditions employ some form of a prayerful, meditative state of awareness and most scientists confess that they pray, scientists still struggle to deal with their own findings and some religious persons are uncomfortable with the idea of studying such a sacred process. Psychiatrist Elisabeth Targ has conducted some of the most comprehensive and carefully designed studies on the power of distant healing intent and the results of her studies consistently show a small but significant positive effect. Other scientists such as biologist Dr. Keith Stewart Thomas question whether researchers have been careful enough in their definition of prayer and if there may be a danger for the sickest of patients in creating a false hope for prayer over active attention and personal responsibility for one's health and healing.[4]

A careful analysis of the data shows conclusively that a patient's mental well being has a measurable and positive effect on the course of disease. It shows that prayer helps and that people of faith who feel like they are in supportive communion with their God or a Higher Power tend to be contented people. Contented people tend to do better when their health is threatened. But is that all there is to it? Is there something much more magnificent going on when our intentions and prayers result in changes in living systems? Is the power of prayer due only to psychological support and a positive state of mind? Is there divine intervention "upon request" that is involved in the positive findings about prayer? What about the ethics involved for "control" groups who are not prayed for in a prayer study? What about "bad wishes" or harmful prayers? There are many important issues involved when science and spirituality meet.

Most researchers consider two kinds of prayer. First is the meditative or worshipful kind of prayer similar to that of ancient healers, kahuna, and shaman. This is the kind of prayer in which the healer enters into some form of loving, compassionate attitude. It is "non-interventional" in intent. So-called "supplicative" prayer is a more direct request for divine intervention for one's self or for someone else to recover from an illness. Prayer researchers call this "interventional" prayer. Perhaps this traditional division for research purposes is not helpful and there is a more constructive approach to studying and understanding the mysteries of the apparent effects of prayer. Is it possible that we could learn more about the power of prayerful intervention if we viewed our research on this process not as a test of faith or the power of a religious belief or practice but as an exploration of the nature of human consciousness and its relationship to the higher power or powers, the "something more" that even the most skeptical persons often sense as influencing their personal destiny and health, their daily life, and the meaning of our death?[5]

A key question in learning more about the power of our wishes and prayers is whether monothetic science characterized by inviolable laws is able to deal fully with the issue of consciousness. It is difficult when what is being sought is doing the seeking. What is consciousness? Is it more than just something we "have" or is it perhaps something we collectively "are?" Instead of asking where consciousness comes from or where it is, perhaps we should ask how we evolved from consciousness? Are we ourselves the "thoughts" of a Higher Power? Is the perplexing connection indicated by the effects of studies on prayer evidence that we are manifestations of a common, timeless, and universal consciousness? Is our consciousness merely reactive or can it inject order into systems across time and space? In our study of prayer and distant intentionality, we are wading into very deep and sacred waters. Ancient healers have experience in these waters, but the less oceanic mind often fears their depths.

The essence of the power of prayer is faith. The research evidence shows that faith plays a key role in all healing processes. Even if it was proved tomorrow that prayer does not "work," the mental, physical, and emotional state that accompanies loving prayerfulness has been shown to be good for our health. As philosopher Soren Kierkegaard pointed out, "Prayer does not change God, but it changes him who prays." A Hawaiian `olelo no`eau (proverb) says, "`O ke aloha ka ma I ho`ole `ai." It is translated, as "compassion is the healer." In the absence of the final proof of the power of prayer, feeling and giving compassion may be one of the best things we can do for our own and everyone's health.

As with all decisions about health and healing, we are assisted in our decisions about the many issues regarding the healing power of our prayers, wishes, and intentions when we go beyond blind faith. However, the essence of science is the struggle "to know for sure," but the essence of God or the Absolute is unknowability. Perhaps this will always be true of prayer. Perhaps we come to understand prayer when we try as hard as we can to learn all we can about it while having faith enough to accept that we will never be able to know all we want to know. It is our rational mind that makes us strong enough to master our physical world, but it is our spiritual willingness to remain comfortable with the unknowns that brings us comfort in our world.[6]

Einstein warned that religion without science is blind, but science without religion is lame. Perhaps, as philosophers have suggested, if the existence of God were scientifically proven tomorrow, God would – like so many of the miracles of the world – begin to be taken for granted. The struggle between proof and faith may ultimately be unnecessary. As the founder of modern medicine wrote, "Prayer indeed is good, but while calling on the gods, a man should himself lend a hand."

References

1. Benor DJ. Believe It and You'll Be It: Visualization in Psychic Healing, *Psi Research*. 1985;42-43.
2. Benor DJ. *Healing Research. Volumes 1-4*. Munich, Germany: Helix Verlag; 1993.
3. Dossey L. *Healing Words*. San Francisco, CA; HarperCollins; 1993.
4. For a comparison of points of view on the study of prayer and distant intentionality, see: Tage E, Thomson KS. Can Prayer and Intentionality Be Researched? Should They Be?, *Alternative Therapies*. 1997;3(6):92-96.
5. For a review of the research from this perspective, see: Tage E. Evaluation of Distant Healing, *Alternative Therapies*. 1997;3(6):74-77.
6. For a review of the research and issues related to wishing and the power of intentionality, see: Pearsall P. *Wishing Well: Making Your Every Wish Come True*. New York, NY: Hyperion; 2000.

Schering/Key Pharmaceutical

Claritin-D® 12 Hour
(5 mg loratadine/120 mg pseudoephedrine sulfate, USP)
Extended Release Tablets

Claritin-D® 24 Hour
(10 mg loratadine/240 mg pseudoephedrine sulfate, USP)
Extended Release Tablets

Claritin® RediTabs®
10 mg (loratadine rapidly-disintegrating tablets)

Claritin® Syrup
(loratadine) 10 mg per 10 mL

Once-a-day
nasonex®
(mometasone furoate monohydrate)
Nasal Spray, 50 mcg

Claritin®
10 mg TABLETS (loratadine)

Tequin®
gatifloxacin

Schering **Velvet Agena-Chee**
Senior Sales Representative
Voice Mail (800) 782-2347
Box 3858

Schering **Donn keoki Arizumi**
Pharmaceutical Representative
Voice Mail (800) 544-5420
Box 8058

KEY **Shawn Brady**
Sales Representative
Telephone (808) 387-1409
Voice Mail (800) 554-5420
Box 1342
FAX (808) 373-1772
E-Mail shawn.brady@spcorp.com

Schering **Mark Buquoi**
Sales Representative
Telephone (808) 384-3862
Voice Mail (800) 544-5420
Box 9795
FAX (808) 841-6105

Schering **Dennis M. Hamamura**
Senior Pharmaceutical Rep.
Telephone (808) 671-0225
Voice Mail (800) 544-5420
Box 8774
FAX (808) 671-0817

KEY **Carol K. Honda**
Sales Representative
Voice Mail (800) 554-5420
Box 8322
FAX (808) 593-1776

Schering **Rachelle Hyde**
Sales Representative
District Trainer
Voice Mail (800) 782-2347
Box 3861

KEY **Caroline Perry**
Sales Representative
Voice Mail (800) 554-5420
Box 1274
E-Mail Caroline.perry@spcorp.com

Schering **Brian Souza**
District Account Representative
Telephone (808) 394-9475
Voice Mail (800) 554-5420
Box 6811
FAX (808) 394-9475
E-Mail brian.souza@spcorp.com

Integrative Health and Healing: "Looking In" to "Left Out" Medicine

Paul Ka'ikena Pearsall, PhD
President and CEO, Ho'ala Hou; Clinical Professor, University of Hawaii at Manoa



All forms of healing are "alternative." They are paths contemplated by those of us who seek relief from physical, emotional, or spiritual suffering. But how do we know the safest and best path? This is the dilemma all of us will confront sometime in our life and in the lives of those we love.

History shows that we have always been willing to try almost anything to avoid suffering and delay death. Physician Oliver Wendell Holmes wrote, "... there is nothing men will not do, there is nothing they have not done to recover their health and save their lives."[1] When I faced my own death from Stage IV Lymphoma, I was willing to try anything not only to save my life but also to lessen my pain and the suffering of my family. The whole body irradiation, chemotherapy, poisonous substances injected into my body, and bone marrow transplant were radical "alternative" approaches just decades ago, proving that what medical science considers as "alternative" or "complementary" today often becomes standard practice tomorrow.

My life was saved by following many alternative paths, including the approaches of ancient Hawai'i. But how do we know which paths are safe to take? How do we know how to heal when many practitioners seem so narrowly confined to and protective of their own paths? How do we know which of what have been called the "left out" medicines not typically taught in United States medical schools, should remain left out?[2] How can we make enlightened choices about our own and our family's health and healing when we feel overwhelmed by so many paths and so many people beckoning us with such confidence in their way? How can we find our own unique way to wellness when there can be such dogmatism and narrow-mindedness within the healing arts themselves? How can we avoid self-delusion at those times when we are so afraid and needy?

Modern science provides one of the most powerful methods for guarding against self-delusion and quackery. It is a powerful system for help in our decision-making, but it is not the only system for assessing the worthiness of a healing path. Most alternative medicines have their roots in indigenous cultures with long histories and their own unique scientific paradigms. As Einstein pointed out, not everything that counts can be counted and not everything that can be counted counts. Myths, chants, legends, and ancestral wisdom have value, too. When considering an alternative medicine, it is essential to understand not only its "technique" but its cultural history and perspective regarding health, healing, and illness. In making our decision about our healing alternatives, the issue can be "and" and not "or."

While many speak of a "holistic" approach, we too often find ourselves in a contest of dogmas. Even when the scientific method discovers a clearly life saving device, dogmatism can persist. Benjamin Franklin's eighteenth century lightening rod saved countless homes and lives, but some condemned him for deflecting God's aim when His judgment was to destroy the home of a particular sinner.[3] What is needed to truly look "in" to the left out medicines is a combination of a cautiously modern mind, an indigenous heart sensitive to cultural wisdom, and a patient balance between sound logic and openhearted exploration of all alternatives free of propaganda and open to learning, rather than unquestioning dependence. In other words, we must truly get "in" to the approach and its origins rather than just look "at" it.

One problem with looking into alternative healing approaches is that we often do so when we are desperate and least able to make rational choices. It is wise to start exploring the healing paths at times when we do not feel pressured to accept almost any source of new hope. The time to consider alternatives to healing is when we feel least in need of healing.

Here are some questions I asked when I confronted my own death. I do not suggest that my list is any way complete. I offer it only as a stimulus for developing your own questions regarding consideration of the "left out" medicines.

1. ARE YOU CLEAR ON WHAT CONSITUTES HEALTH FOR YOU? How do you define health and healing in your life? How will you know when a healing approach is helping? Will you define health as only the absence of symptoms and avoiding death or with a view to being whole, connected, and in alignment between your body, mind, soul, family, ancestors, and the land?

2. DO YOU HAVE AN OPEN MIND? Do you see all approaches, even modern medicine, as alternative ingredients from which to concoct your own healing elixir? Are you "considering" or just "jumping in" to a healing approach out of despair?

3. ARE YOU CONSIDERING THE "SYSTEM" AND NOT JUST THE TECHNIQUE? Do you understand the origins of the healing system you are considering? Are you willing to embrace the cultural, historical, and spiritual assumptions of the system from which the strength of the procedure in question derives rather than trying to use its "techniques?"

4. DO YOU KNOW THE EVIDENCE? What is the track record of the approach you are considering? Have you asked people you trust about it? Have you read about the process in reputable sources other than advertisements and promotions materials? Remember, modern medical science considers anecdotes as just stories, but a lot of anecdotes become data. Whether that data is sufficient depends on reading more, asking more of those without a vested interest in the procedure, and talking to someone who may have experienced the process first hand.

5. WHAT IS THE RISK/REWARD RATIO? There are risks with all healing approaches. All interventions have both positive and negative effects, so ask not only about their good points but their dangers.

6. DO YOU HAVE FAITH IN THE SYSTEM? All healing is faith healing, but blind faith can kill you. If you do not have sincere faith in the system or practitioner you select, you deprive any healing system of much of its power. If your faith is born of desperation rather than careful reflection, contemplation, and sharing with someone you trust, you risk mistaking false reliance for true confidence.

7. CAN YOU WAIT JUST A WHILE? Fast decisions regarding healing are usually regretted decisions. When it comes to your health, try to have a "tortoise mind" and not a "hare brain." Do not just try to decide. Instead, take time to see what comes to you.

8. ARE YOU BEING SEDUCED? Remember, degrees are earned but being a healer is a gift. It relates to less tangible matters such as experience, spiritual integrity, respect for cultural linage, and a kind and gentle heart. Do not allow the status, power, or prestige of the practitioner to overwhelm you. There is a crucial partnership that must form between the patient and the healer. Ask yourself if the approach is being humbly offered rather than arrogantly sold.

9. ARE YOU REMAINING FREE TO CHOOSE? Healing is a dynamic process. All life systems are in a constant state of flux. Keep your mind and heart open and keep asking, learning, and considering if you feel that you are moving toward your definition of well-being.

10. ARE YOU PRAYING? No matter what alternative technique or approach you decide to try, keep praying and keep asking others to pray for you. Science cannot explain all the reasons why, but the research is clear that prayer and the effects of our and others intentions even at a distance can have a positive effect on whatever healing path we elect to follow.[4] As most indigenous cultures have taught for millennia and the Bible states, "And he spake a parable unto them to this end, that men ought always to pray . . ."[5]

Now that I have been cured of cancer and encountered so many alternative healing ways, I wonder if perhaps we should not be looking for healing paths at all. Perhaps we should instead consider our situation not from the continental "rock" logic orientation but from a more Hawaiian oceanic, water logic. Perhaps then we would be freer to flow upon and within rather than decide and follow.

References

1. Quotation from Oliver Wendell Holmes is in *Medical Essays*. Boston, Mass: Houghton Mifflin; 1883.
2. The term "left out medicine" was used by David Eisenberg, MD and his colleagues to refer to medical interventions not taught widely in the medical schools of the United States. Eisenberg DM, Kessler, Keesler C, et al. Unconventional Medicine in the United States: Prevalence, Costs, and Patterns of Use, *New Engl J Med*. 1993;328:245-252.
3. Lorimer D. *Whole in One*. London, England: Arkana, 1990:157-158.
4. For a summary of the research on prayer, see: Dossey L. *Healing Words: The Power of Prayer and the Practice of Medicine*. New York, NY: HarperCollins; 1993.
5. Luke 18:1

FIVE WAYS TO DIE ON THE GOLF COURSE:

1. Hit by a golf ball.
2. Run over by a golf cart.
3. Whacked by a golf club.
4. Struck by lightning.
5. Forgot your hat.

Surprisingly, one million new cases of skin cancer are detected every year. One person an hour in the U.S. dies from melanoma, the deadliest form of skin cancer. If you spend a lot of time in the sun, you should protect yourself. One out of five Americans develops skin cancer during their lifetime. Don't be one of them. Stay out of the midday sun. Cover up. Wear a hat. Seek shade. And use sunscreen. For more information on how to protect yourself from skin cancer, call 1-888-462-DERM or visit www.aad.org.

AMERICAN ACADEMY OF DERMATOLOGY

Is There Any Evidence?

Frank L. Tabrah, MD
Professor of Physiology and Emeritus Professor of Community Health, John A. Burns School of Medicine, University of Hawaii at Manoa; Medical Affairs Department, Straub Clinic & Hospital



Alternative and complementary medicine until recently lay outside standard medical school training and hospital practice. Semantically, alternative medicine is used "instead of" and complementary medicine "in addition to." The American Board of Medical Specialties recognizes 24 allopathic or "standard" medical care disciplines such as Obstetrics and Gynecology, Pediatrics, General Surgery, Dermatology, and Family Practice.[1]

Allopathic practitioners and basic science workers have tried to systematically record treatment outcomes since the time of the early Egyptians and Greeks. Treatment results are published, working with these critically important scientific precepts:

- Observe carefully
- Form a theory that fits known facts
- Set up trial or experiment **with controls**
- Examine results **statistically**
- Draw conclusions only from **evidence**
- Correlate theory with results
- Apply findings clinically

Much standard medical care in use today is based on clinical trials reported in quality specialty journals, the information carefully reviewed by recognized experts in teaching centers, whose concern with controls and proof of treatment effectiveness arises directly out of these fundamental rules of science.

The National Institutes of Health recognizes seven main classes of alternative and complementary care:

- Manual healing
- Alternative systems
- Bioelectric methods
- Diet, nutrition, and lifestyle changes
- Herbal Medicine
- Mind/Body Control
- Pharmacologic and Biologic treatments

and some 65 subsets of systems of care, of which these are a few:

- Acupuncture
- Chiropractic
- Lifestyle changes
- Diet
- Homeopathic Medicine
- Cultural Practices
- Chelation Therapy

Our title, "Is There Any Evidence" tacitly invites a comparison of therapeutic value between standard care and these other systems. For standard care, we can safely say *yes,* there is evidence, secure in the worldwide application of the research principles noted above.

Asking the same question for alternative and complementary medicine, we do not often find comparable controlled studies, agreement with long established physical and chemical facts, or consistent results among many observers. Strong psychosomatic effects are rarely ruled out, when clinical studies are done at all. So, for a large number of our +/- 65 modes of alternative and complementary medicine outlined by the National Institutes of Health, this reply is "perhaps," because of the sparsity of controlled research with statistical validity. There lies ahead a long and controversial road on which to test the myriad of treatments involved. Seemingly outrageous claims must be weighed against known basic science, and conclusions must be equally free of cultural bias and academic rigidity. NIH funding will accomplish some of these aims only if objectivity prevails.[2]

A question–if alternative and complementary medicine systems and medications are so controversial, why their incredible popularity, costing about 27 billion dollars a year–more than all hospitalizations combined, with nearly 50% of patients seeking out non-conventional cures. Here are some of the reasons:[3]

- Anecdotal accounts of success
- Non-threatening care
- Cultural "tugs"
- Avoidance of costly, unpleasant tests
- Defiance of "big science"
- Lower cost
- Faith is "easier" than scientific jargon
- Compassionate practitioners

A few cautions are advisable for those venturing into personal alternative or complementary care:

- Try to have a firm diagnosis first
- Beware of self-diagnosis and treatment
- Try to understand the difference between true clinical studies and sales pitches
- Remember, much internet information **is nonsense**

And a warning on herbs:[4]

Avoid: Germander
Chaparral
Comfrey
Skullcap
Excessive vitamin dosages

Since much of the outstanding success of alternative and complementary medicine is clearly psychosomatic–that is, suggestive and faith-based, we should value these systems for what they really are, that they are systems of highly skilled interventional psychiatry, and that they do not need to rely on descriptions of imaginary force

fields, auras, and other concepts which defy known physical and biochemical facts.

Two examples: one, the use of small magnets near the body for pain–we have done some controlled experiments on this, and as with previous studies by others, find no effects, although one study claims relief of post polio pain. Therapeutic interaction with static magnetic fields is extremely unlikely, considering the vast energy difference of one billionth to one between any possible induction effects in tissues and normal thermal molecular activity.

Similarly, the claims for Kirlian photography showing an aura around people, plants, and animals are truly bizarre–in our lab we showed changing "auras" with Kirlian equipment–around nickels, dimes, paper clips, and dead insects by varying the film, pressure, and current used.

In considering alternative and complementary medicine, perhaps we should simply avoid the question "is there any evidence," and say that even if there isn't any physically, or very little, that if patients say they are improved or cured and no harm is done, why not go ahead and use anything that appears to work? Two questions loom–first, safety, and second, who is going to pay for it?

In the real world, these questions are the thrust of today's intensive research. While much of value may lie undiscovered or unexplained, **rationality is a must.** As a British author said, "beware of passing through the gates of knowledge into the fields of fancy."

References

1. NIH Office of Alternative Medicine Clearing House. Mar. 1997.
2. NCCAM Clearing House. Available at: http://nccam.nih.gov/. Accessed Oct 2000.
3. Austin J. Why Patients Use Alternative Medicine. Results of National Study. *JAMA*. 1998;279(19):1548-53.
4. Onopa J. Complementary and Alternative Medicine (CAM): A Review for the Primary Care Physician, *HMJ*. 1999:58:9-19.

SOLUTIONS THAT SAVE
TIME & MONEY



Digital imaging of your documents is the advanced technology that will save your practice time and money.

- Indexing of documents provide digital search and retrieval capabilities
- Immediate access to patient files
- Quick and easy file sharing with other physicians
- Affordable and cost effective
- Rapid turnaround

SYNTERA
Solutions

BUILDERS OF NEXT GENERATION IMAGING SOLUTIONS & STORAGE AREA NETWORKS

Call us today at (808) 440-8508 or visit us at www.synterasolutions.com

Stroke and Complementary Medicine

Jack Burke, ND, LAc
Naturopathic Physician; Acupuncturist; Past President, Hawaii Society of Naturopathic Physicians; Past President, Hawaii State Board of Naturopathy



A stroke is an event which can have devastating consequences. Strokes occur when an embolus obstructs one of the arteries in the brain, causing necrosis of the tissue which is fed by those vessels. Alternately, a blood vessel ruptures, again causing necrosis in dependent tissues, and in tissues which are affected by the blood. The hemorrhagic type of stroke is primarily genetic, the embolic stroke is partially genetic, but more clearly lifestyle related, and hence partially preventable. The prevention of and treatment of embolic strokes is an area where the integration of conventional and alternative approaches to medicine would be of benefit to patients, and result in significant cost savings.

Predisposing factors for stroke include atherosclerotic lesions in the blood vessels, hypertension, and the tendency of the blood to clot, forming thrombi. Of further consequence are arrhythmias of the heart. Conventional treatment of hypertension is primarily drug oriented, and there have been great gains in this area. Unfortunately there may be significant side effects from these medications, and the compliance rate is notoriously low due to real and perceived reactions. Atherosclerosis has been addressed primarily with diet (low fat, low cholesterol) and with cholesterol lowering drugs. Again, there have been great gains, and more willing acceptance by the public of these interventions.

Research however, reveals some areas where nutrition, including supplementation, may benefit the patient with additional improvement in outcome, i.e. stroke prevention. There is ample evidence that the intake of fiber, green vegetables and fruits do decrease the incidence of strokes. The work of Shintani and Ornich are evidence of the application of such dietary principles. In addition, however, there is emerging evidence that the avoidance of hydrogenated fats may be more important than total fat or cholesterol in the avoidance of atherosclerosis. A nutritional approach to atherosclerosis suggests that the maintenance of endothelial health is most important. Plaque formation is seen to be a response to endothelial damage. A nutritional approach to endothelial protection involves the use of antioxidants to decrease free radical damage. Specific research suggests that lipoic acid, selenium, and vitamins C and E may be helpful in avoiding or repairing such damage. In addition, the specific role of homocysteine in endothelial damage is beginning to be recognized. There is evidence that there may be a straight-line increase in atherosclerotic lesions from homocysteine even at "normal" levels of 7 - 10. Homocysteine is easily reduced with folic acid, which may be supplemented with B6, B12 and Betaine. We are still waiting for evidence that lowering homocysteine will decrease stroke, but this is a cheap and safe therapy, and should be considered in stroke prevention. Antithrombotic therapies which have been researched include bromelain, a pineapple enzyme, and ginseng. Fish oils and omega 6 oils have been associated with improved vascular contractility, with lowered blood pressure, and with decreased stroke risk. Potassium and magnesium supplements have not been proven to decrease blood pressure, but have been shown to decrease stroke risk. Crataegus Oxyacantha (hawthorne) can be very effective for certain types of arrhythmias, and is extremely well tolerated.

The immediate treatment of stroke has been improved dramatically over the past decade with such agents as TPA. Not as much progress has been made in rehabilitation. Too often overlooked, are the prospects of using acupuncture therapy as part of the rehabilitation process for stroke patients. In "Neuroepidemiology", 1993, a study of stroke patients showed significant increase in regain of function with acupuncture started before 36 hours at 3x per week for four weeks. Benefits were significant at 28 days, and continued to be so at 90 days. Benefits were best in those patients with the most neurological impairment. Note that the treatment should be started as soon as possible. Too many patients are referred to acupuncture at 1 to 2 years after their strokes, and have disappointing results.

Lifestyle changes such as weight loss and exercise are very effective in lowering blood pressure in many patients, and specifically Tai Chi and yoga are excellent for these purposes. Retrospective studies underscore the relationship between unexpressed anger and cardiovascular disease of all types, and Ornish in his work stresses the importance of group discussions. In conclusion, there are many effective applications of complementary medical modalities in the prevention and treatment of stroke.

Until There's a Cure,

There's the

American Diabetes

Association

Integrative Medicine Approach to Obesity and Diabetes

Terry T. Shintani, MD, JD, MPH
Director of the Center for Integrative Medicine, Waianae Coast Comprehensive Health Center;
President, Hawaii Health Foundation;
Assistant Clinical Professor, University of Hawaii John A. Burns School of Medicine



One of the most perplexing problems in health care is the rise in obesity over the past two decades. CDC statistics show that the prevalence of obesity has risen each year in the U.S.,[1] and there is no end in sight. Along with obesity comes other health problems such as coronary heart disease and diabetes. While solutions to these health problems have eluded modern medical approaches, ancient traditional systems have had simple and effective solutions that have been ignored for decades and only recently are coming to light. To obtain the best results for our patients, we must integrate what is best from modern medicine and ancient medicine and come up with something even better.

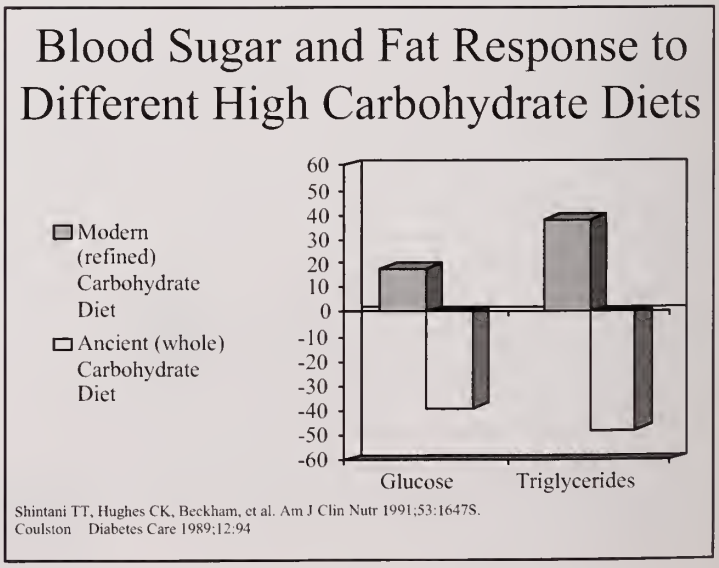
When I studied nutrition years ago, I also studied oriental medicine. My oriental medicine teacher had many wise things to share about the principles and practice of this ancient art. Only now, after being in practice for a number of years and being involved in research do I truly see the depth of the truth of these ancient teachings. For example, we were taught that the key to illness is not some germ or virus or cholesterol. In ancient oriental teachings, "arrogance" is the key to illness–arrogance that we can ignore the laws of nature and not have health consequences–arrogance to think that we can alter our food supply and come up with something healthier than what nature developed over millions of years–arrogance that we can with an aresenal of modern high tech chemical "magic bullets" that we can destroy all disease. The sad truth that we must face is that we are reaching the end of our ability to solve problems artificially and we must return to humble ourselves to learn the universal laws of nature embodied in the ancient wisdom of our ancestors.

How does this apply to the problem of obesity and diabetes? It is simple. If we would just take time to understand nature and life the way the ancient healers did, and take some advice from our ancient predecessors, we would understand what is causing obesity and diabetes. Once we understand the cause, the solution becomes obvious. For thousands of years, humans ate foods that were centered on grains, vegetables, legumes and fruit. Animal products were optional and small in quantity if eaten at all. The human digestive tract, teeth, jaws, fingernails, all point to the fact that we are herbivores or near-herbivores. The plant material that humans consumed was whole and unrefined.

Today, our food supply is grossly different from what humans have eaten over the millennia. This is the simple traditional answer to the seemingly baffling problem of nutrition-related diseases such as diabetes and obesity. Today we eat far more animal products, far more animal fat, and far more refined carbohydrates than ever before.[2] Meanwhile, the simple staple food of most of humanity–whole grain represents only 2% of our total grain intake. The rest of it is refined in the form of white flour and cereal products and our intake of added sugar is a staggering 42 teaspoons per person per day. This unnatural diet that we consume in America is the cause of many of our ills today.

The solution can be found in our ancient ways. An old traditional American shaman's advice to regain health is to "return to the arms of mother corn." The ancient staple of the Americas since the dawn of civilization has been corn. The simple advice means to return to the traditional diet centered on whole grains. We took this principle and applied ancient Hawaiian principles and created the "Waianae Diet" which is based on ancient traditional Hawaiian food. The results showed that high blood sugar, and obesity could be reversed with this approach.[3] One woman on 80 units of insulin no longer required insulin after 10 days on this type of diet. Using this same ancient wisdom, we created the "Hawaii Diet" which is based on traditional foods of the many cultures in Hawaii and demonstrated similar results.

Modern science suggests that high carbohydrate diets cause a rise in blood sugar and a rise in triglycerides. A study done at Stanford



University on the effect of a high carbohydrate diet was based on modern American carbohydrate sources and demonstrated a rise in both blood sugar and triglycerides compared to a lower carbohydrate diet.[4] By contrast, both the Waianae Diet and Hawaii Diet are high in carbohydrates (over 70% of calories) and low in fat (7 to 12% of calories). Yet they both cause just the opposite effect from that which other studies predicted. Our studies showed a reduction in blood sugar and triglycerides. Why is there such a difference in outcome? The basic difference is that our diets were based on ancient principles and thus the carbohydrate sources were generally whole unrefined carbohydrate sources. Most of the high carbohydrate diets being studied in this country are based largely on refined carbohydrates.

This is one simple example of how the application of ancient traditional wisdom can enhance the results of an approach to a health problem. Ancient traditional principles and practices are a treasure trove of healing wisdom. If modern medical practice is to become the best it can be for patients, we must open our minds to the wisdom of the ancient traditional healing arts and examine what we can gain from them. By integrating the best of the ancient and modern worlds of the healing arts, we may arrive at the best possible approach to dealing with the problems of obesity, diabetes, and other diseases that afflict most people in modern times.

References

1. U.S. Obesity Trend in Adults from 1991-1998. National Center for Chronic Disease Prevention and Health Promotion, Center For Disease Control, 1999.
2. Agriculture Fact Book 1998, Department of Agriculture, 1999.
3. Shintani TT, Hughes CK, Beckham S, O'Connor HK. Obesity and cardio-vascular risk intervention through ad libitum feeding of traditional Hawaiian diet, *Am J Clin Nutr.* 1991;53(16):47S-51S.
4. Coulston AM, Hollenback CB, Swislocki AL, Reaven GM. Persistence of hypertriglyceridemic effect of low-fat high-carbohydrate diets in NIDDM patients, *Diabetes Care.* 1989:Feb: 12(2):94-101.

Eve in Paradise

Controversies in Women's Health

Professional Meeting
Ilikai Waikiki Hotel
November 15-16, 2001

Six mainland guest faculty and local experts will present the latest information on:

- Breast, cervical and ovarian cancer
- Heart Disease
- Emotional Well Being
- Incontinence
- Osteoporosis
- Alzheimer's Disease
- Menopause
- Diabetes
- Beauty

The Straub Foundation is accredited by the Hawaii Medical Association to provide continuing medical education for physicians.

The Straub Foundation designates this educational activity for a maximum of 13.25 hours in category 1 credit towards the AMA Physician's Recognition Award. Each physician should claim only those hours of credit that he/she actually spent in the educational activity.

STRAUB FOUNDATION

Seating is limited. For more information on the Professional Meeting or Free Public Meeting on November 17, 2001, call 524-6755.

Complementary and Alternative Healing in Paradise: The State of the State

Ira D. Zunin, MD, MPH, MBA
Chairman and President, Hawaii State Consortium for Integrative Health Care; Private Practice, Preventative and Integrative Health Care



Think about it! A study by David Eisenberg, M.D., Director of the Center of Alternative Medicine at Harvard, found that in the United States there are now more visits each year to alternative medicine providers than to primary care medical doctors. Think about it, again! In 1997 that number stood at over 600 million visits. We also know that Americans are paying more dollars out-of-pocket for alternative medicine services than we are paying out-of-pocket for all U.S. hospitalizations. For instance, in 1997 Americans paid roughly 27 billion dollars for complementary and alternative services.

Preliminary studies on the use of complementary medicine in Hawaii indicate that trends within the state are at least comparable to growth on the mainland. This stands to reason. Hawaii has its own rich native healing tradition. In addition, the islands are a melting pot, in many ways a gateway to the East. As such, the state itself is the source of so much we are seeking to blend when we speak of conventional medicine and complementary/alternative modalities.

My own ancestors are all from the other side of the world, from Russia. After passing through immigration at Ellis Island one hundred years ago, my great-grandmother opened a candy shop in the Lower East Side of New York. She sold dozens of confections for every taste. Exploring alternatives in healthcare is not unlike being in a candy shop or maybe a crack seed store. We first have to ask, "What do you have? What's available?" In Hawaii there are four licensed complementary and alternative medicine (CAM) professions:

Naturopaths: Among the CAM professions, licensure for Naturopaths requires the most extensive training. This training has many similarities with medical school. Naturopaths do not prescribe pharmaceuticals and do not perform surgery. Instead they focus on the healing power of nature and care for their patients with a strong focus on lifestyle. Herbal treatment is a mainstay of care and, depending on specialty interests, naturopaths may also practice homeopathy, acupuncture, counseling and various modalities of "hands on"/manual medicine. In Hawaii, Naturopathy is a small but vibrant profession.

Chiropractic: Chiropractic focuses on supporting the alignment of the spine. The premise is that correct alignment supports a healthy nervous system and good health in general. In Hawaii, the chiropractic profession is well-established, highly organized and well-utilized.

Acupuncture: Acupuncture is by far the fastest growing CAM profession. It is based on the concept that channels of energy, called meridians, run in regular patterns through the body. In order to maintain and restore health, the acupuncture practitioner inserts needles to help keep these channels in balance. Hawaii schools of acupuncture are working to provide quality education and to establish appropriate use of professional titles. Unfortunately, Hawaii also remains the only state in the United States in which your medical doctor cannot practice acupuncture under a medical license. This represents a serious access issue that many hope will be addressed in the next legislative session.

Massage: Massage is the fourth licensed profession. It is the largest with respect to the number of active licensees. There is a tremendous range in how massage therapists practice and the techniques they use. Most modalities can be loosely grouped into medical massage, deep tissue work, energy work and meridian based therapies.

Insurance coverage: Let's assume that you've chosen to see one of these CAM licensed practitioners for your healthcare needs. What is likely to be covered by your medical insurance? The good news is that insurance access is increasing. For example, HMSA and Kaiser combined comprise roughly 80% of the Hawaii insurance market. For approximately one year now, Kaiser has offered an optional supplemental rider for complementary services. HMSA now offers a discount program. HMAA and UHA also offer CAM programs. Over the years, Workers' Compensation and No Fault (PIP) automobile insurance have also covered the licensed professions. All four licensed professions are available under Workers' Compensation. Three are covered under PIP; naturopathy was pulled from the No Fault law in 1998. Overall, these increased insurance offerings represent a profound qualitative increase in access for the people of Hawaii.

What about Hawaiian healing? Although not formally licensed, Hawaiian spiritual healing is also reimbursed by these insurance policies. This may include: hands on lomi lomi, hooponopono, a type of counseling or lauau lapaau, and the use of herbal pharmacology. Of course, Hawaiian healing cannot be reduced to the modalities just enumerated. It is the underlying fabric, the life view, the mana that it draws from, that is Hawaiian healing.

Are licensed practitioners the only CAM professionals? We've been speaking about the licensed professions. Licensure provides some benefits in terms of being able to identify practitioners who have formal credentials. Yet there are downsides to licensure. For example, many argue that it is inappropriate to try to license those who have studied an oral tradition passed on through a lineage by

apprenticeship. Popular unlicensed professions include Yoga, Chi Gung, Tai Chi and multiple traditions that address the mind's role in the cause and course of illness.

Where do I begin? What type of modality and which practitioner should I try? In the information age there is so much one can do independently. Gather information. Use the internet. You may contact professional societies to check on a particular practitioner or to get names for a referral. If you have selected a practitioner you might want to work with, ask the practitioner about past training, qualifications, past experiences with your condition, and scope of practice.

The Integrative Medicine Consult: More and more it is possible to obtain specialty consultations in Integrative Medicine. Patients' current conditions and past treatments are evaluated and recommendations are made regarding traditional approaches as well as complementary and alternative modalities that may be of benefit.

A caveat: If you are seeing a CAM practitioner, it is important that you advise your primary medical doctor that you are seeking medical alternatives. For example, drug-herb interactions can occur. Keeping this kind of information from your physician can result in adverse outcomes.

Epilogue: One of the best ways to nourish oneself and restore health is to trust the messages coming from your own body. There is so much information that becomes available when we listen to these signals. But bear in mind: There are a number of silent killers. For instance, diabetes, hypertension and high cholesterol don't physically hurt. Unless you are at extreme levels of blood pressure or blood sugar, there are no particular sensations associated with these problems being out of control.

Ultimately, optimum health is often not simply about taking the right pill, or undergoing a certain surgical procedure. It is not only about taking the right herb or the right medication. It's not just about getting the right neck adjustment or having acupuncture needles placed in the skin. It is about mana, chi, ki, prana. It is about balance. It is about partnership, communication, relationship, and quality self-care. In general, we need to trust ourselves more and commit ourselves to living our lives in a way that keeps us healthy. This is the best way to integrate alternatives in health and the best way to optimize healing in paradise.

References

Eisenberg DM, et al, Trends in Alternative Medicine Use in the United States 1990-1997, *New Engl J Med.* 1998;280:1569-1575.



HAWAII POISON CENTER

OAHU: 941-4411

NEIGHBOR ISLANDS TOLL-FREE:

1-800-362-3585

Free Hotline 24 Hours a Day.

POISON CENTER TIPS

- Keep the number of the Hawaii Poison Center on or near your telephone.
- If you suspect a poisoning, do not wait for signs and symptoms to develop. Call the Hawaii Poison Center immediately.
- Always keep Ipecac Syrup in your home. (This is used to make a person vomit in certain types of poisoning.) **Do not use Ipecac Syrup unless advised by the Hawaii Poison Center.**
- Store all medicines, chemicals, and household products out of reach and out of sight, preferably locked up.
- A good rule to teach children is to "always ask first" before eating or drinking anything—don't touch, don't smell, don't taste.

Donate to help us save lives.

Mail checks, payable to:

Hawaii Poison Center

1319 Punahou Street, Honolulu, HI 96826

Medical School Hotline

The Art of Medicine

Excerpted from the White Coat Ceremony* Key Note Address, August 3, 2001

Kamal Masaki, M.D.
Professor of Geriatric Medicine
John A. Burns School of Medicine

**The White Coat Ceremony creates an important focus for students entering medical school. Each student receives his/her first white coat, also called, "cloak of compassion". The Ceremony impresses upon them the primacy of the doctor-patient relationship. The message conveyed is that physicians should care as well a cure. The Ceremony was conceived by the Arnold P. Gold Foundation, an organization dedicated to fostering humanism in medicine. (Adapted from the Arnold P. Gold Foundation.) Faculty and alumni of the School of Medicine and the student's family and friends attend this event.*

Dean Cadman, Dean Izutsu, faculty, guests, and students of the Class of 2005:

I'm very happy to be here with you this evening. This is a proud moment for our new medical students and their families and friends. For many of you, this reflects the fulfillment of a lifelong dream.

Tonight, I would like to talk about the "Art of Medicine". The art of listening can be very important when caring for patients. We should aim to understand our patients as human beings, not just their medical problems. Touching a patient's hand, or simple words of reassurance can make all the difference in the world. The doctor-patient relationship is one of the most sacred trusts that will be given to you, and I urge you to live up to it to the best of your ability.

After today, your life will be changed, both for the better and for the worse. Your careers in medicine will be filled with many triumphs, but also with extremely sad moments. You will feel the thrill when a patient who you thought would not survive, pulls through miraculously and does well. You will also lose patients and have to deal with your own feelings, at the same time trying to help the patients' families get through difficult times.

I would like to give you some examples from my own experience. As a first year fellow in Geriatrics, it was my first day on the nursing home service. The previous fellow told me that one of our patients was not expected to survive much longer. He was an elderly man who had had many strokes and had been in the nursing home for many years. His wife was devoted to him and came to the nursing home every day to feed him. I saw him that first day to make sure that he was comfortable and not in pain. The next day, he passed away in his sleep. I met his wife for the first time at his bedside. She was very upset and I was surprised to hear her say that his death was "so sudden" because I knew from his chart that his health had been poor for many years. Since then, I've come to realize that to their loved ones, the final event is often considered sudden, even when it is expected. This couple had been married for over 60 years and their children were on their way to Hawaii from the mainland. I didn't like to leave the patient's wife alone because she was so upset. I stayed with her for a while and just listened to her stories about her life with her husband. A week later, I got a telephone call from her, and to my astonishment, she asked me to become her physician. I didn't feel like I had done anything to help her, but she told me that the time I had spent with her after her husband's death had meant a lot to her. Her trust and confidence in me really touched me, and she continues to be my patient to this day. It taught me that sometimes small actions can give great comfort.

I have also had moments when I have said or done things that I am not proud of and wish I could re-do. I vividly remember a case when I was a senior resident in Michigan. Our patient was a young lady with severe end-stage lupus, who was in a coma in the ICU. Bedside rounds were being made by the entire medical team. We were standing around the patient's bed having an animated discussion about pathologic features and prognosis of lupus. It was the youngest member of our team, the third year medical student, who gently reminded us that perhaps we should move this discussion outside the patient's room, in case she could hear us. To this day, whenever I think of it, I feel very ashamed that I needed to be reminded of something so very basic. I have no excuse, but I have tried hard to learn from my mistakes.

Fortunately, all of us find mentors that we wish to emulate, and who guide us through difficult choices. I feel lucky that the program directors of my residency program in Michigan and my fellowship program in Hawaii, were both kind and compassionate human beings and role models, in addition to being skilled physicians and teachers. Some of you may already know someone who inspired you to choose a career in medicine. Many of the physicians at this medical school, some of whom are in the audience today, are wonderful human beings and I encourage you to learn both the science and the art of medicine from them. I think you will find that this medical school provides a warm, nurturing environment for learning. We encourage you to aim high in your academic achievements, but have fun along the way. Most importantly, keep your empathy, compassion and caring intact, even when you're tired or overworked.

I have now been faculty at the University of Hawaii for 10 years and helped to train many fellows in Geriatrics. Regarding their knowledge base, some have been brilliant, some average. However, if I were to choose who I would want to take care of my own parents, I would not make the selection based on intelligence or scores on the board examinations. Instead, I would pick the ones with the biggest hearts, who truly care for their patients. I think all of us in medicine should go through our careers trying to treat all our patients the same way we want our own families to be treated.

We have had many technological advances in the field of medicine. For some doctors, technology has become a substitute for talking to patients. I recommend that all of you read a book titled "The Lost Art of Healing" by the famous Dr. Bernard Lown, a cardiologist who won the Nobel Peace Prize in 1985. I would like to read you an excerpt from this book, from a famous essayist, shortly before he died of prostate cancer. He wrote, "I wouldn't demand a lot of my doctor's time. I just wish he would brood on my

Continued on p. 269

Cancer Research Center Hotline

Researching Nutrition and Breast Cancer

Gertraud Maskarinec, MD, PhD
Cancer Research Center of Hawaii

The risk to develop breast cancer varies at least five fold around the world. Migrant women from low incidence countries to the United States experience a gradual increase in risk, suggesting that it takes more than one generation for migrants to adopt the risk of the host country and that risk factors may act early in life or *in utero*. In Hawaii[1], first generation migrant rates were already more than twice as high as rates in Japan (36 vs. 13 cases per 100,000) and increased to 57 cases per 100,000 for the second generation. While breast cancer incidence in Japan averaged approximately 28.6 per 100,000 women during 1988 to 1992[2], women with Japanese ancestry in the United States experienced incidence rates of 82.3 per 100,000 women as compared to 111.8 per 100,000 Caucasian women.[3] Ethnic differences can be partially explained by menstrual, reproductive, and anthropometric factors, but a large proportion of the discrepancy in risk remains unexplained. A comparison between breast cancer risk factors in China and in the United States[4] found that the combined population attributable risk was 63% for reproductive factors and anthropometric factors, leaving a large proportion of risk unexplained. Thirty years ago, it was proposed[5] that ethnic differences were a result of environmental and life-style factors which are modified only with the passing of generations. According to this hypothesis, breast cancer risk among descendants of migrants will be similar to the risk of the host population once they have achieved full acculturation. One of the more apparent changes that migrants, in particular Asian migrants, experience over time are eating patterns. Because of the large number of Japanese migrants who came to Hawaii during the beginning of the 20th century and thanks to the Hawaii Tumor Registry established in 1960, Hawaii has been an ideal place to study the effects of nutrition on breast cancer incidence and mortality.

Early dietary research in Hawaii showed that compared to Japanese migrants[1], second generation Japanese consumed less Asian foods, such as rice, tofu, sashimi, salted fish, green tea and more Western foods, such as meat and coffee. In terms of nutrients, fat intake was higher in the second generation, while protein intake remained equal. Fat and protein intake was correlated with breast cancer in an aggregate study design[6], but in a case-control study[7] no strong support for the fat hypothesis was detected. A later study[8] described an increased risk of similar magnitude among Caucasian and Japanese postmenopausal women with the consumption of sausage, meats, and dairy items, but no significant association for fat, saturated fat, or animal protein. As a result of the early dietary fat studies around the world, the WINS (Women's Intervention and Nutrition Study) was initiated.[9] Cancer survivors, 154 women in Hawaii out of 2,400 nationwide, have been randomized to a low fat *vs.* regular diet to determine whether dietary fat reduction in post-menopausal women with breast cancer will decrease the relapse rate and prolong disease-free survival.

Over time, a large nutritional data base has been developed at the Cancer Research Center. It contains a food composition table with information on 132 nutrients and food components for 2200 foods, many of them based on recipes used by different ethnic groups in Hawaii. In a large multiethnic cohort of diet and cancer established in 1995[10], more than 200,000 men and women in Hawaii and Los Angeles have completed a quantitative scannable food frequency questionnaire which was analyzed with the help of the nutritional data base.[11] This cohort study will follow more than 50,000 women of Caucasian, Japanese, and Native Hawaiian ancestry in Hawaii for many years. Data from the questionnaire will provide the opportunity to analyze the effect of different foods and nutrients on breast cancer risk. In addition, blood and urine samples will be collected and analyzed for vitamins, minerals, and phytoestrogens to determine possible associations with breast cancer risk.

In recent years, accumulated dietary research from many different populations has questioned the role of dietary fat in breast cancer etiology and lead to a shift in research focus to other aspects of nutrition. In particular, fruits and vegetables as well as soy foods[12] have been investigated as potentially protecting against the disease, whereas excess caloric intake and adult weight and gain in body mass[13] are suspected to increase breast cancer risk through a mediating effect of insulin and related growth factors.[14] Soy foods and isoflavones, phytoestrogens contained in soy products, have been a research focus at the Cancer Research Center for many years. The Analytical Laboratory at the Center has the ability to measure isoflavone levels in a variety of foods and in body fluids[15] and has shown that urinary isoflavone excretion can be used as a marker of soy intake.[16] A case-control study which included Asian-American women from Hawaii[17] detected a 30% decreased risk of breast cancer for women born who reported eating tofu more than once a week as compared to women who ate tofu less than once a month. However, the protective effect of soy was primarily observed among women born in Asia. After completing a pilot clinical trial with isoflavone tablets, the BEAN (Breast, Estrogens, And Nutrition) study now investigates the hypothesis whether two servings of soy per day (as tofu, soy milk, soy nuts, protein isolate, or soy bar) will alter menstrual cycle length and circulating estrogen levels, which are considered predictors of breast cancer risk,[18] in premenopausal women during a two-year intervention. In cooperation with several mammographic clinics, approximately 200 women have been recruited into this study so far. Comparison of mammograms at baseline and at the end of the study will provide us with information whether soy foods affect the appearance of healthy mammograms as suggested in a previous study.[19] Mammographic density is an independent risk factor for breast cancer conferring an approximately fourfold risk to develop the disease[20] in women with a large proportion of dense areas in their mammograms when compared to women with the lowest density patterns. As part of the multiethnic cohort, a mammographic density research project will explore possible influences of soy foods and other dietary factors on mammographic densities.

An emerging area of promising research is the interaction between nutritional intake and polymorphisms in genes coding for enzymes that are involved in the chemical activation and detoxification of nutrients, carcinogens, and hormones. The interaction hypothesis may be able to explain why persons with the same genetic material

experience a low breast cancer risk in one environment and a higher breast cancer risk in a new environment. In contrast to germline mutations, such as *BRCA1* and *BRCA2*, with a low population prevalence and a strong breast cancer association, polymorphisms are present in at least one percent of the population and make people more sensitive or resistant to exogenous exposures and endogenous processes.[21] Because of their high prevalence, they have the potential to be responsible for large numbers of breast cancers despite their relatively weak association with the disease.[22] The Genetic Shared Resource at CRCH has started to explore the role of polymorphic genes that code for metabolizing enzymes in determining mammographic densities and breast cancer risk. We hope that future research in this direction will elucidate the interactive effects of genetic predisposition and nutritional patterns on breast cancer risk. For more information, please visit the Cancer Research Center of Hawaii's website at www.crch.org.

References

1. Kolonel LN, Hankin JH, Nomura AM, Hinds MW. Studies of nutrients and their relationship to cancer in the multiethnic population of Hawaii. *Adv.Exp.Med.Biol.* 1986; **206**:35-43.
2. Ferlay J, Bray F, Pisani P, Parkin DM. Globocan 2000. Cancer incidence, mortality and prevalence worldwide (Computer Program). Lyon, France, IARC Press, 2001.
3. Miller BA, Kolonel LN, Bernstein L, Young JJL, Swanson GM, West D *et al.* Racial/ethnic patterns of cancer in the United States 1988-1992. National Cancer Institute. NIH Pub. No. 96-4104. Bethesda, MD, 1996.
4. Smith-Warner SA, Spiegelman D, Hunter DJ for the Pooling Project of Prospective Studies of Diet and Cancer Investigators. Population attributable risk of breast cancer due to reproductive factors (Abstract). *Cancer Epidemiol.Biomarkers Prev.* 1998; **7**:176.
5. MacMahon B, Cole P, Brown J. Etiology of human breast cancer: a review. *J.Natl.Cancer Inst.* 1973; **50**:21-42.
6. Kolonel LN, Nomura AMY, Hinds MW, Hirohata T, Hankin JH, Lee J. Role of diet in cancer incidence in Hawaii. *Cancer Res.* 1983; **43 (Suppl)**:2397s-402s.
7. Hirohata T, Nomura AMY, Hankin JH, Kolonel LN, Lee J. An epidemiologic study on the association between diet and breast cancer. *J.Natl.Cancer Inst.* 1987; **78**:595-600.
8. Goodman MT, Nomura AMY, Wilkens LR, Hankin JH. The association of diet, obesity, and breast cancer in Hawaii. *Cancer Epidemiol.Biomarkers Prev.* 1992; **1**:269-75.
9. Cohen LA, Rose DP, Wynder EL. A rationale for dietary intervention in postmenopausal breast cancer patients: an update. *Nutr.Cancer* 1993; **19**:1-10.
10. Kolonel LN, Henderson BE, Hankin JH, Nomura AMY, Wilkens LR, Pike MC *et al.* A multiethnic cohort in Hawaii and Los Angeles: baseline characteristics. *Am.J.Epidemiol.* 2000; **151**:346-57.
11. Stram DO, Hankin JH, Wilkens LR, Henderson B, Kolonel LN. Calibration of the dietary questionnaire for a multiethnic cohort in Hawaii and Los Angeles. *Am.J.Epidemiol.* 2000; **151**:358-70.
12. World Cancer Research Fund. Food, nutrition and the prevention of cancer: a global perspective. Washington, DC: American Institute for Cancer Research, 1997.
13. Le Marchand L, Kolonel LN, Earle ME, Mi MP. Body size at different periods of life and breast cancer risk. *Am.J.Epidemiol.* 1988; **128**:137-52.
14. Kaaks R. Nutrition, hormones, and breast cancer: is insulin the missing link? *Cancer Causes Control* 1996; **7**:605-25.
15. Franke AA, Custer LJ, Cerna CM, Narala K. Rapid HPLC analysis of dietary phytoestrogens from legumes and from human urine. *Proc.Soc.Exp.Biol.Med.* 1995; **208**:18-26.
16. Maskarinec G, Singh S, Meng L, Franke AA. Dietary soy intake and urinary isoflavone excretion among women from a multiethnic population. *Cancer Epidemiol.Biomarkers Prev.* 1998; **7**:613-9.
17. Wu AH, Ziegler RG, Horn-Ross PL, Nomura AM, West DW, Kolonel LN *et al.* Tofu and risk of breast cancer in Asian-Americans. *Cancer Epidemiol.Biomarkers Prev.* 1996; **5**:901-6.
18. Henderson BE, Pike MC, Bernstein L, Ross RK. Breast cancer. In Schottenfeld D, ed. *Cancer epidemiology and prevention*, pp 1022-39. New York: Oxford University Press, 1996.
19. Maskarinec G, Meng L. An investigation of soy intake and mammographic characteristics in Hawaii. *Breast Cancer Res.* 2001; **3**:134-41.
20. Boyd NF, Lockwood GA, Byng JW, Tritchler DL, Yaffe MJ. Mammographic densities and breast cancer risk. *Cancer Epidemiol.Biomarkers Prev.* 1998; **7**:1133-44.
21. Shields PG. Pharmacogenetics: detecting sensitive populations. *Environ.Health Perspect.* 1994; **102 (Suppl 11)**:81-7.
22. Le Marchand L, Kolonel LN. [Cancer in Japanese migrants to Hawaii: interaction between genes and environment]. *Rev.Epidemiol.Sante Publique* 1992; **40**:425-30.

WE COLLECT PAST DUE ACCOUNTS

Only 25%* fee for Health Care Firms!

Why give up more!



Wood & Tait

HI Collection & Detective Agency
Staff on Kauai, Oahu, Maui, & Hawaii
http://www.woodtait.com

739-0433

jwood@woodtait.com

*Applies to accounts assigned during this promotion; no restrictions as to dollar size or age of accounts. Fee will increase to 50% if litigation or forwarding required; you will receive a contract.

"Medical School Hotline" continued from p.266

situation for perhaps five minutes, that he would give me his whole mind just once, be bonded with me for a brief space, survey my soul as well as my flesh to get at my illness, for each man is ill in his own way.... Just as he orders blood tests and bone scans of my body, I'd like my doctor to scan me, to grope for my spirit as well as my prostate. Without some such recognition, I am nothing but my illness."

To the new medical students, congratulations on successfully getting through an arduous interview process and being selected. Tonight you have received your first white coat. I now invite all of you to put on your "cloak of compassion" and join the JABSOM family.



A is for Apple,
B is for Ball,
C is for Cancer.
Cancer?

Little Adam knows all about the grown-up subject of cancer. He's got it. But he's also got *St. Jude Children's Research Hospital* to help. To learn more, call St. Jude at **1-800-877-5833.**

Danny Thomas, Founder

Aloha Laboratories, Inc.
...When results count

CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

David M. Amberger, M.D.
Laboratory Directory

Phone: (808) 842-6600
Fax: (808) 848-0663
E-Mail: results@alohalabs.com
http://www.alohalabs.com



FILES! FILES! FILES!
LET US CLEAR THE LOAD!

We'll take a load off your mind (and body), and give you the freedom of more space to think. **CALL EZ-MAN THE CLUTTER BUSTER** at either of our 2 locations in town.

FREE! FIRST MONTH* Any Size Locker

*Some restrictions may apply.

MasterCard VISA BBB MEMBER HAWAII

EZ-ACCESS STORAGE SYSTEMS
SINCE 1976
Visit us at our website: www.ez-accessstorage.com

CENTRAL AREA (near Ward Ave.) Close to Waikiki, Ala Moana & Downtown. **592-0220**

NORTH KING AREA (in Kalihi) Close to Freeway, Kam Heights & Salt Lake. **832-0450**

Classified Notices

To place a classified notice:

HMA members.–Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.

Nonmembers.–Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Assistant Researcher

ASSISTANT RESEARCHER, R3, Position No. 86656T, UH NeuroAIDS Specialized Neuroscience Research Program (SNRP), Pacific Biomedical Research Center, full-time, temporary, non-tenure track position, 11-mo, to begin approximately 11/2001. DUTIES: To develop a clinical neuropsychology program in support of the UH NeuroAIDS Specialized Neuroscience Research Program. To assist in the structure, conduct and analysis of research neuropsychological testing to be performed in the projects under this program and to interact with other members of this program as a member of an interdisciplinary research team studying NeuroAIDS. Responsible for mentoring and teaching of undergraduate and graduate students as well as medical students and residents. MINIMUM QUALIFICATIONS: Ph.D., licensed in Clinical Psychology, Fellowship trained in Clinical Neuropsychology, Board certified or eligible in Neuropsychology. DESIRABLE QUALIFICATIONS: Experience in neuropsychological testing in the setting of HIV/AIDS; research experience especially in HIV/AIDS, knowledge of cross-cultural neuropsychological issues, familiarity with Hawaii and its population. MINIMUM ANNUAL SALARY: $40,524 or commensurate with previous experience. TO APPLY: Interested applicants should submit a curriculum vitae and telephone numbers of 3 references to: Dr. Cecilia M. Shikuma, Hawaii AIDS Clinical Research Program, 3675 Kilauea Ave., Young Bldg. 5th Fl., Honolulu, HI 96816. E-mail: shikuma@hawaii.edu INQUIRIES: Dr. Cecilia Shikuma at 737-2751. Closing Date: 11/5.

Office of Cancer Communications
National Cancer Institute

Pap Tests
A healthy habit for life!

Pap tests can help find cervical cancer at an early stage – while it's still easier to cure.

Call the National Cancer Institute's Cancer Information Service at 1-800-4-CANCER (1-800-422-6237).

Visit NCI's website at http://www.nci.nih.gov

The Weathervane Russell T. Stodd MD

The Fume In The Plume Stays Mainly In The Room.
So what happens to that fragmented cell material in photorefractive surgery? Most surgical masks don't filter below a micron, and a large amount of particles are below that threshold in the "laser plume." Moreover, masks may be tied loosely allowing easy access for vapors, and the tendency is to remove one's mask between cases. Meanwhile, an odorless particulate cloud may linger in the laser suite for an extended time. One surgeon noted some wheezing for the first time, while running a 10-K, and later ended up in the coronary care unit with symptoms like a heart attack. It was surmised that particles from the plume passed through the alveoli and directly into the cardiac circulation producing vasospasm. Evacuation systems vary, and with one company's laser, often everyone in the room starts coughing and wheezing about the middle of the day. A German group analyzed the plume and found complex bioaerosols (benzene hydrocyanide, formaldehyde) - a fair number of carcinogenic molecules. No question, the ogres are everywhere.

Madness Is Rare In Individuals, But In Bureaucracy It Is The Rule.
Another punji stick in the day to day practice of medicine is Americans with Disability Act and the deaf patient. According to the statute, you must supply an interpreter at the request of a deaf patient.If you deny an interpreter you are effectively excluding that person from participation in the process of informed consent. A signing interpreter may appear with a deaf patient, and send you a bill for his/her services, as happened to one of our HOS members, even if you did not make a request for assistance.

No Prescription? No Doctor? No Problem!
How many of your patients are getting medicine on-line? As many as 400 pharmacies now operate on line providing medications at the patient's request, no doubt led on by direct TV prescription drug ads. Many on-line drug stores recruit semi-retired, or unemployed doctors to approve prescriptions. Some are legitimate and employ registered pharmacists to answer customer's questions, but most sites are much simpler. A questionnaire is filled out which the physician reviews, and the drug is provided. The doctor is paid perhaps $10,000 per month for part time work, or on a volume basis. The system is ripe for abuse. One reporter ordered and received Viagra for her 6 month old son, using his actual height, weight and date of birth. A Seattle newsman got medication for weight loss, but gave data stating normal weight. An Arizona surgeon who worked for an internet pharmacy prescribed Viagra for an FDA agent who filed a complaint with the Board of Medical Examiners. The Board found that the doctor kept no records, often failed to review the questionnaire, did not bother with informed consent, and might approve as many as 1,000 Rxs per week. The doctor was reprimanded for "unprofessional conduct" and agreed to pay a $5,000 fine, take 40 hours of pharmacy CME, and refrain from on-line prescribing. The company continues to operate. Government officials are not claiming there's anything wrong with on-line prescriptions, but more than a dozen states have passed, or are considering, legislation to establish standards. Congress is working on a Pharmacy Consumer Protection Act

There Is No Opinion So Absurd That Some Philosophers Won't Express It.
The issue of stem cell research continues to plague the scientific community as the Pope, politicians, pastors, and poets, plod and persevere with the perception of procreation. The Pope did not say so in those words, but almost endorses discarding viable embryos which are not to be implanted. However, he decries using the same embryos for medical-scientific-genetic research which have the potential to generate or regenerate human organs for diseased or damaged humans. President Bush waffled his way forward with a ruling which permits federal funding of stem cell research with limitations. For those laboring in gene study, he didn't go far enough, but the door is ajar, if not wide open, and research opportunities exist in this potentially magical medium.

What Use Is Wisdom When Folly Reigns?
On the subject of appalling legal decisions, a California jury awarded $1.5 million to "send a message" that doctors must not ignore patients' pain. A highly respected physician was found at fault for not administering enough pain medication for an elderly, terminally-ill patient. The doctor did not have an established relationship with the patient, and treated him in the emergency department. He was aware that the patient went into respiratory distress with the initial dose of morphine, and was logically cautious. At no time during the course of the hospitalization did the family or the patient request an increase in pain medication. The patient died at home shortly after leaving the hospital and returning to the care of his treating physician. When the patient's daughter requested that the California Medical Board investigate the case, the Board found insufficient evidence to take any action. Yet, strangely, the Board expressed to the daughter that the doctor's pain management was inadequate. This brought media attention, a *Dateline* story, an offer of legal support from an Oregon based group, "Compassion in Dying," and a discussion of JCAHO's new subjective measurement scale (1 to 10). It was alleged his subjective pain level was between 7 and 10, but that contrasted with nurses notes which indicated effective pain management. So, a caring, intelligent, thoughtful physician got run over by the media steamroller, a thoughtless Board of Medicine, and a carefully manipulated jury. Oh gee, medical practice is a lot of fun, fun, fun.

Stupidity Can Be Astounding.
While it may seem that our system of jurisprudence often lacks common sense, the French courts have come up with a ruling that is both asinine and abhorrent. The highest court of appeal, the *Cour de Cessation*, has ruled that a disabled child is entitled to be compensated when the mother was not given a chance to abort the defective fetus. Lawyers for three children - one with a malformed spine, two born with only one arm - claimed that the pregnancies would have been terminated if the doctor had detected a fetal disability. Apparently, the court failed to recognize that French doctors, when detecting the slightest defect on sonogram, now must tell the patient to abort because the law has mandated it. In other words, all the handicapped should never have been born, and any imperfection must be destroyed. Dr. Mengele would be so delighted to see the Nazi aryan philosophy of eugenics becoming French law in the 21st century.

First, God Made Idiots For Practice. Then He Made School Boards.
In Ohio, a 15 year old boy and several friends created an off-campus website dedicated to skateboarding and humor. The website featured the boy and friends in humorous photos and focused on skateboarding, videography and juvenile humor. Nothing on the site was obscene. Teachers, administrators and schools were not mentioned, yet the school officials charged the boy with "bullying," under some idiotic zero tolerance mindset. Police were even sent to the boys home to review the tape with his parents, and could find nothing wrong with it. He was suspended for five days and placed on in-school expulsion until November. A law suit, joined by the American Civil Liberties Union, is pending against the school. This case is reminiscent of the insane New Jersey school that suspended five year olds for using their index fingers as a "firearm." Are we in the hands of idiots, or what!?!

Read The Bumper Sticker.
True love can find physical expression. In Britain, a man had the message, "Connie, will you marry me?" tattooed on his buttocks. She discovered the proposal when she gave him a massage. A week later when he was returning the massage favor, he read the word, "Yes" on her backside. Hey, it's more romantic than a tee shirt, and turning the other cheek is biblical.

ADDENDA
- ❖ Ducks can sleep with one eye open.
- ❖ Lightning strikes men about seven times more often than it does women.
- ❖ The human heart beats more than 2.8 billion times in an average life span.

Aloha and keep the faith —rts■

Contents of this column do not necessarily reflect the opinion or position of the Hawaii Ophthalmological Society and the Hawaii Medical Association. Editorial comment is strictly that of the writer.



Checked your practice lately?

You strive to be the best practitioner you can. You stay current in your field. You spend countless hours checking on the health of your patients.

Who is checking on the health of your practice?

Is your business thriving? Should you understand the cash flow side of your business better than you do?

TeamPraxis manages the business side of medicine. We optimize your:

- ***CPT coding.***
- ***Patient billing and collection.***
- ***A/R management.***
- ***Cash flow.***
- ***Work flow management.***

Give us a call to get a free consultation.

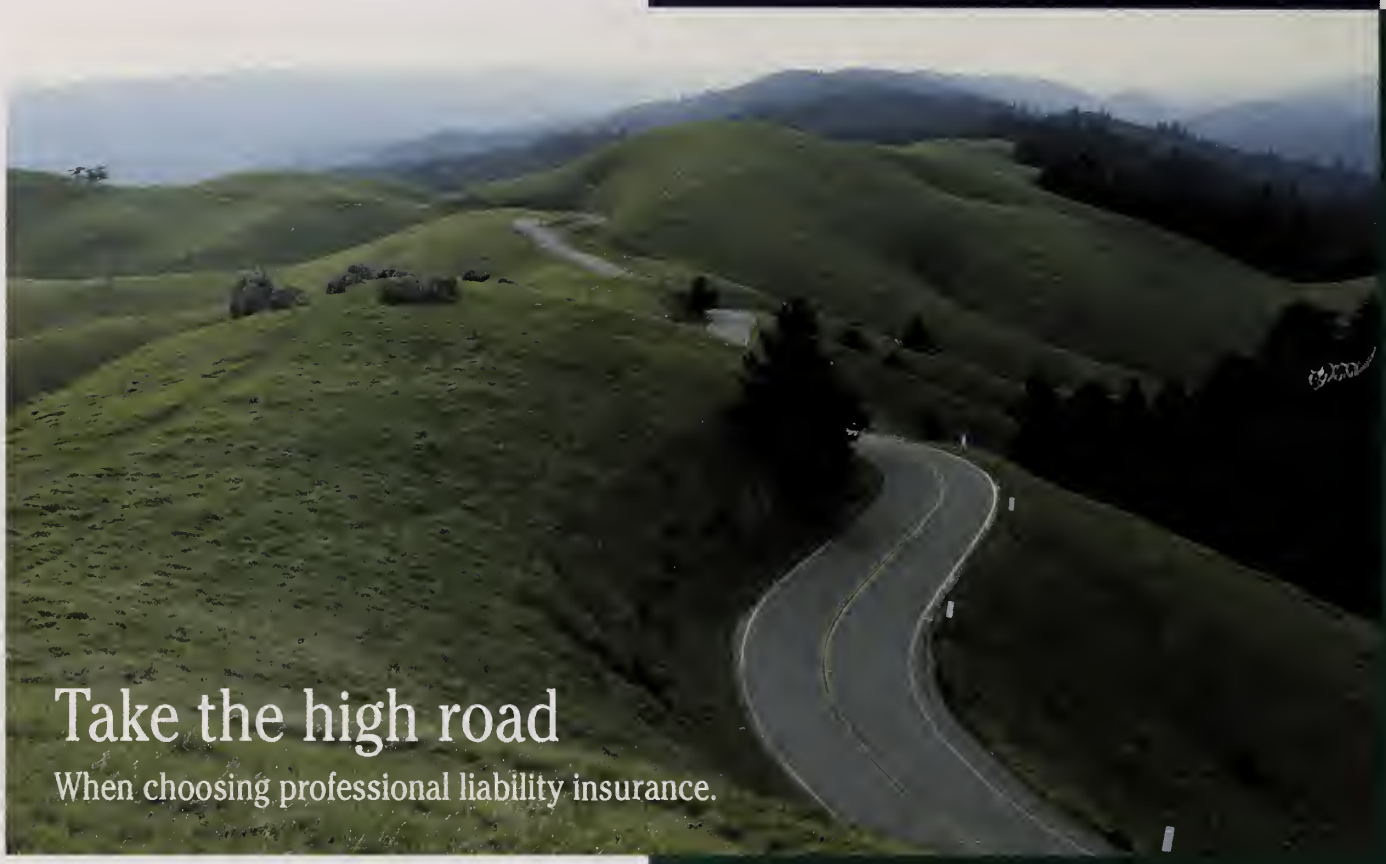
TeamPraxis™

Your practice management team.

948-9343

Neighbor Islands, call
866-TPRAXIS
(866-877-2947)

www.TeamPraxis.com



Take the high road

When choosing professional liability insurance.

NO RATE INCREASE IN 2001

MIEC

Medical Insurance Exchange of California

6250 Claremont Avenue
Oakland, California 94618
800-227-4527
www.miec.com

HAWAII CLAIMS OFFICE:
1360 South Beretania Street,
Honolulu, Hawaii 96814

Rated "A" (Excellent) by A.M. Best

Sponsored by the Hawaii Medical Association

THE SAFEST ROUTE IS
WITH AN EXPERIENCED GUIDE.

In Hawaii, that's MIEC. We are the West's first physician-owned, not-for-profit professional liability insurer. For more than a quarter century, we've protected doctors with financially secure coverage. We're also known for our unsurpassed, d of returning olicyholders, permit. We've $200 million.

Hawaii medical journal
v. 60
no. 10
October 2001
Received on: 11-13-01
Brown University Library
SCI

nsurance is a long-term business relationship. At MIEC, we take this commitment seriously.

Choose the genuine original, MIEC.

HAWAII MEDICAL JOURNAL

November 2001 Volume 60, No. 11 ISSN: 0017-8594



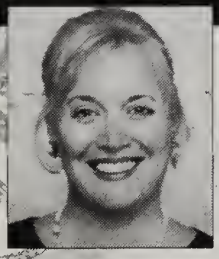
Special Issue on Alternative Medicine – Part II

xxxxxxxxxxxxxxxxxxxxxxxMIXED ADC 967
Serials Dept
Box I
Brown University
Providence, RI 02912-9127


1% ONCE A DAY
Noritate™
(metronidazole cream) Cream, 1%
PSORCON®e
(diflorasone diacetate cream) 0.05%
(diflorasone diacetate ointment) 0.05%
BENZAMYCIN® Topical Gel
(3% erythromycin, 5% benzoyl peroxide)
Klaron®
(sodium sulfacetamide lotion) 10%
DERMIK
Innovation that makes a world of difference
Our Mission: To become a global leader in providing innovative dermatological products to patients and healthcare providers.
To learn more, call 1.610.454.8110, or visit our site on the World Wide Web at http://www.dermik.com
Platinum Benefactor
Honor Society
Dermik Laboratories supports research in skin care through a grant to the Dermatology Foundation
DERMIK LABORATORIES, INC.
Dedicated to Dermatology™
A RHÔNE-POULENC RORER COMPANY

Straub welcomes these outstanding new physicians

NEUROLOGY



Dr. Lynn Stuart Ashby is Board Certified in Neurology and Palliative Medicine. Special interests include neuro-oncology and general neurological care. Received Doctorate of Medicine at Northwestern University Medical School, Chicago, IL. Neurology residency at St. Joseph's Hospital and Medical Center, Phoenix, AZ. Fellowship in neuro-oncology at The Barrow Neurological Institute, Phoenix, AZ. She is also the Neuro-oncology Consultant for the Gamma Knife Center of the Pacific.

ORTHOPEDIC SURGERY



Dr. Michael Reyes' special interests include joint replacement surgery, arthroscopy/sports medicine, trauma and general orthopedics. Received Doctorate of Medicine from University of Pennsylvania School of Medicine. Residency at University of Southern California Department of Orthopedic Surgery. Fellowship in Adult Reconstruction/Joint Replacement Surgery at the University of Southern California Department of Orthopedic Surgery.

RADIOLOGY



Dr. Kryss Kojima is Board Certified in Diagnostic Radiology. Special interests include body imaging, magnetic resonance angiography, magnetic resonance coil design and computers. Received Doctorate of Medicine from Oregon Health Sciences University, School of Medicine. Diagnostic Radiology Residency at Oregon Health Sciences University. Fellowship in body imaging at Stanford University.

Straub

Partners in health

straubhealth.com

24-Hour Appointment Line: 522-4777

BEFORE THE HMA MEMBER PACKAGE.

AFTER.



EXTRA BANKING BENEFITS EXCLUSIVELY FOR HMA MEMBERS.

Medical professionals help people every day. The least we can do is return the favor. With things like free and discounted personal and business banking services, discounted mortgage loan fees, reduced rates on business financing, free consultation and reduced fees on financial planning, and a Business Banker to help you with it all. Not to mention, reduced blood pressure. HMA members can take advantage of our exclusive banking package by calling 643-LOAN.

First Hawaiian Bank®

THE power OF yes.

Bank Online www.fhb.com

Member FDIC

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Second Floor
Honolulu, Hawaii 96814
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
John Breinich MLS, Satoru Izutsu PhD,
James Lumeng MD, Douglas G. Massey MD,
Myron E. Shirasu MD, Frank L. Tabrah MD,
Alfred D. Morris MD

Journal Staff
Editorial Assistant: Drake Chinen

Officers
President: Philip Hellreich MD
President-Elect: Gerald McKenna MD
Secretary: Calvin Wong MD
Treasurer: Paul DeMare MD
Past President: James Lumeng MD

County Presidents
Hawaii: David Camacho MD
Honolulu: William McKenzie MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Gardner Quarton MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 2001 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 278

Letter to the Editor 278

Book Review
Charles DeMasa MPH 279

Integrative Medicine: An Academic Discipline
T. Samual Shoemaker MD, JD 280

Guest Editorial
Theresa Danao MD 281

Are Heart Transplant Recipients Receiving Cellular Memories from Their Donated Organ? A Heuristic Study
Paul Ka'ikena Pearsall PhD 282

Energy Fields in Conventional and Integrative Medicine
Frank L. Tabrah MD 283

Chronic Low Back Pain Disability a Modern-Day Epidemic (Doctoral Research Proposal)
Robert G. Hirokawa DC, MPH 284

The Emerging Field of Yoga Therapy
Karen Chandler MS 286

The Use of Pulsed Electromagnetic Fields (PEMF) in Osteoarthritis (OA) the Knee Preliminary Report
Theresa Danao-Camara MD, FACP, FACR and Frank L. Tabrah MD 288

Complementary Medicine Techniques to Help Reduce Muscular Pain in the Pediatric Rheumatic Illnesses
David K. Kurahara MD 289

Ginko, Vioxx and Excessive Bleeding – Possible Drug-Herb Interactions: Case Report
Tamar Hoffman MD 290

Patient Characteristics and Satisfaction for Members Using Acupuncture Services
Deborah A. Taira ScD and Richard S. Chung MD 291

Guest Editorial
Martina L. Kamaka MD 293

The Impact of Disease on Hawaii's History
Richard Kekuni Blaisdell MD 295

Ho'oponopono
Richard and Lynette Paglinawan 297

Pāola
Michael Chun 297

Kaho'olawe: The Traditional Hawaiian Diet (THD) and Health
Claire K. Hughes DrPH, RD 298

Medical School Hotline
Satoru Izutsu PhD 299

Classified Notices 301

Weathervane
Russell T. Stodd MD 302

Editorial

Norman Goldstein MD
Editor, Hawaii Medical Journal

Special Issue on Alternative Medicine – Part II

We continue our series of papers presented at the Straub Foundation Seminars on Complimentary and Alternative Medicine (CAM). Part 1 appeared in the October 2001 issue of the Journal.

Indicative of the importance of CAM, the John A. Burns School of Medicine is planning to start a Department of Integrative Medicine. The manuscript "Integrative Medicine: An Academic Discipline?" is also published in this Special Issue. Mahalo to T. Samuel Shomaker, M.D., J.D., Vice Dean for Academic Affairs in our medical school for this review. Dr. Shomaker notes that Congress realizing that CAM has become a major health issue in the United States has created a National Center for Complimentary and Alternative Medicine (NCCAM). The John A. Burns School of Medicine believes it is important to train our medical students about all the therapies their patients will receive. There is no doubt that we do need a Department of Integrative Medicine here in Hawaii.

This issue also includes a book review, Meditation Medicine by Dharma Singh Khalsa and Cameron Stauth. Mahalo to Charles De Mesa, M.P.H., an environmental science instructor, for this review.

A textbook book dealing with CAM was recently released: The Clinical Practice of Complimentary, Alternative and Western Medicine, by W. John Diamond, M.D. (e-mail: orders@crcpress.com). The list of monthly publications dealing with CAM continues to expand and includes alternative Medicine Alert and Alternative therapies in Women's Health (e-mail: customerservice@ahc.com).



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

E Lanalana E

This print depicts the unique Hawaiian "happy face" spider which is only found in Hawaii.

Letter to the Editor

Box Jellyfish in Waikiki

We applaud the work of Thomas et al, which appeared in the April 2001 issue of your journal. In this article they present carefully planned and analyzed data on the analgesic effect of hot and cold packs on Hawaiian jellyfish stings. In their article they differentiate between the use of an agent as inhibitors preventing discharge of unfired nematocyst adhering to the victim's skin and pain relief. The public and many physicians forget this distinction. It follows that the clinical importance of inhibiting the rupture of unfired nematocysts will depend upon their number and the incremental effect of adding their venom onto the pain already suffered by the patient. In most cases we think this would be small.

We have found that cold packs are of marginal use in sea nettle (*Chrysaora quinquecirrha*) sting and have the disadvantage of giving a small child a "chill". Heat application was unimpressive. On one occasion one of us (JB) stung his forearm with the Atlantic coast *Portuguese man-o' war* tentacles and rapidly immersed that area from wrist to elbow in a 42°C constant hot water bath for 15 min. That was all the thermal therapy he could tolerate. Two-minutes after removing the lymphangitic streaks appeared on the upper arm, so this practice was discontinued. Such an event did not appear in the present work probably because less heat was applied.

A minor point to be reviewed is the use of vinegar as a nematocyst inhibitor. It is an effective solution against the microscopic firing of Atlantic cast *Physalia* organelles in the laboratory. It is applied as a first aid measure even though it's clinical benefit is probably marginal. *Physalia utriculus*, *Physalia phyalis* and a larger form of the later mulitentacular animal can be found in Queensland waters. Vinegar applicate arrests nematocyst discharge in the first two jellyfish but appears to stimulate firing of the organelle in the latter medusae. Because swimmers and lifeguards do not have time nor the opportunity to always identify the offending species recommended in reference 6 of the Thomas et al. paper to withhold vinegar from Australian patients has made. It is thus safe to say that we do not know whether vinegar should be recommended for use in Hawaii-a subject for these authors also to study.

WJ Burnett[1], JA Williamson[2], PJ Fenner[3]

1. Dermatology Department, University of Maryland Medical System 405 W. Redwood St. Baltimore, MD 212201 USA
2. Royal Adelaide Hospital, North Terrace, Adelaide, South Australia
3. National Medical Officer, Ambrose Medical Group, North Mackey QLD 4740, Australia

Book Review

Meditation As Medicine, Dharma Singh Khalsa, M.D. and Cameron Stauth, New York: Pocket Books, 2001, 284 pp.

In the United States, the number of people turning to alternative practitioners have been reaching record numbers. In 1990 alone, Americans made an estimated 425 million visits to alternative care practitioners compared with 388 million visits to primary care physicians. The majority sought remedies for long-term problems like obesity, chronic pain, anxiety, substance abuse and depression while few sought treatments for life-threatening conditions such as cancer and AIDS. Approximately $14 billion is spent annually for alternative care treatment in the United States. This data published in the New England Journal of Medicine during 1993, indicated that conventional medicine might not always provide the "magic bullet" for some individuals and that many believe that alternative or non-mainstream practices seemed and continue to have valuable, therapeutic benefit.

Integrating certain forms of alternative therapy with standard, medical treatment may be more effective than applying the conventional, isolated approach. In Meditation as Medicine Dharma Singh Khalsa, M.D. and Cameron Stauth explained how medical meditation—kundalini yoga and advanced meditative techniques—could be combined with customary treatment to target and alleviate afflictions ranging from arthritis to high blood pressure to cancer. Each medical meditation was specific for each different medical condition or illness. It was this specificity that separated it from other forms of meditation practice.

The authors introduce Meditation as Medicine by describing how advanced meditation and yoga were actually secrets of spiritual power once guarded by ancient yoga masters and personally passed on from master to student for centuries. In 1969, however Yogi Bhajan—the world's leading authority on yoga and meditation—relocated to America and revealed the secrets of Medical Meditation to anyone who had a sincere interest. Dr. Khalsa applied and continues to apply the techniques of this ancient science in a modern clinical setting. Since the application is relatively new, there have been few studies that demonstrate its effectiveness. Some of the studies have indicated that Medical Meditation was more therapeutically successful than any other form of meditation, including the most scientifically examined form in western culture—Transcendental Meditation. Evidently, more studies are required to assess the accuracy and validity of the findings.

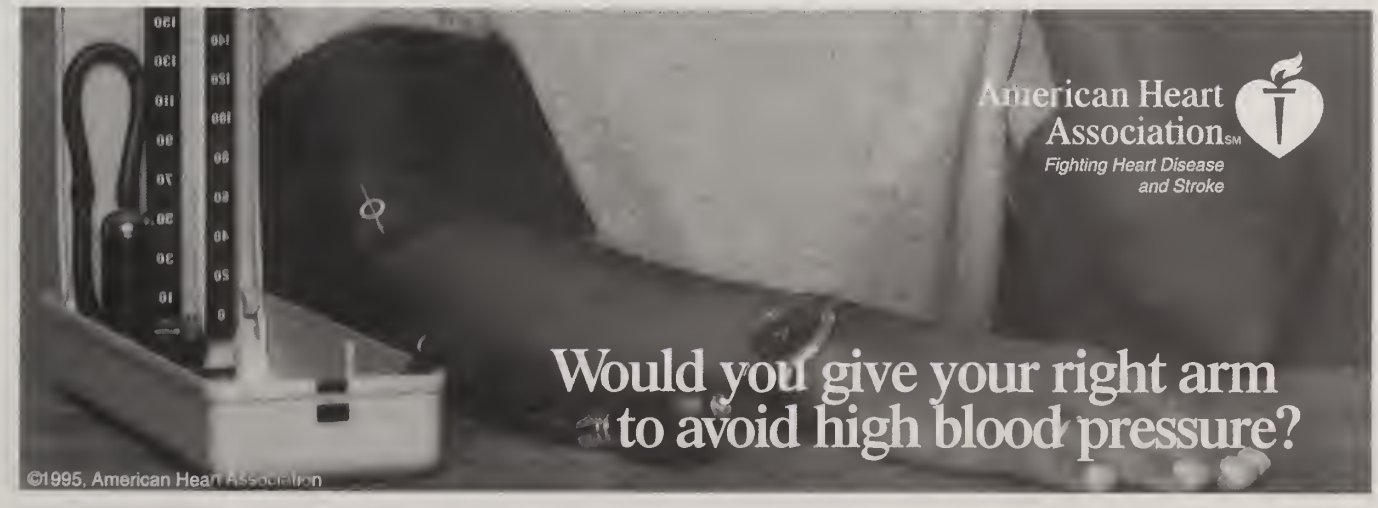
The book is intended for the general population, is easy to read and incorporates practical information such as breathing and concentration techniques, postures/movements, and specific mantras, which can be used for meditation. Drawings and simple directions are included.

The authors described how Medical Meditation was successful because it influenced both the physical and ethereal milieu of our bodies. The physical milieu included specific body parts, organ systems, and glands, while the etheral milieu included the chakras (centers of consciousness and communication), nadis (energy conduits connecting chakras) and tattwas (the complete relationship between a person's chakras and nadis). Both milieus reciprocally influenced health, and balance must be achieved through five, key attributes of Medical Meditation—breathing patterns, exact positioning of hands and fingers, focus of concentration, mantras, and postures/movements. The Medical Meditations were meant to open up channels of communication that existed between mind and body by changing the profile of endocrine, neurotransmitter and hormonal secretions. This was believed to relax an individual into a calm, healing state.

"Meditation as Medicine" should be read by persons who are interested in advance meditative techniques and yoga and those unfamiliar with alternative forms of therapy including medical students and health care practitioners.

"Meditation as Medicine" provides a wealth of information and insight into the use of meditation as an adjunctive modality.

Charles DeMesa MPH



Special Contribution

Integrative Medicine: An Academic Discipline?

T. Samuel Shomaker MD, JD
Vice Dean, Academic Affairs, University of Hawaii John A. Burns School of Medicine

Is complementary/alternative medicine (CAM) a suitable academic discipline to support an organized program of research and education? St. John's Wort (Hypericum Perforatum), an herbal remedy sold over the counter, has been widely touted in the popular media as a treatment for clinical depression, although its effectiveness has not been established in controlled clinical trials and there is little information available regarding its basic pharmacology. Recently, a controlled study in human volunteers showed that blood levels of indinavir, a protease inhibitor used in a treatment of AIDS,[1] and cyclosporin, a drug used to prevent transplant rejection,[2] were markedly reduced in patients taking St. John's Wort. An FDA public health advisory warning concluded that St. John's Wort induces the cytochrome P450 system, a key pathway for the metabolism of many prescription drugs, including those used to treat heart disease, depression, seizures and certain cancers and to prevent pregnancy (oral contraceptives). The warning concluded that the therapeutic effects of these drugs could be markedly reduced by concomitant administration of St. John's Wort.

Although millions of people across the United States now routinely use complementary and alternative therapies, the fact remains that little credible scientific information exists with regard to the effectiveness and safety of many of these therapies. The controversy surrounding St. John's Wort is an example of a situation in which inadequate investigation of a widely available health care product has created a public health problem with significant potential impact on the health of individuals and groups of individuals in our society.

There is no denying that CAM has become big business. A 1997 report estimated that over 42 percent of Americans were using complementary and alternative therapies.[3] Furthermore, another survey completed in 1997,[4] concluded that out-of-pocket expenditures relating to alternative therapies, estimated at $27 billion annually, were comparable to projected out-of-pocket expenditures for all U.S. physician services. Furthermore, the number of annual visits to alternative healers now exceeds the number of total visits to U.S. primary care physicians.

The growing importance of CAM as a public health issue was validated by the United States Congress when it expanded the Office of Alternative Medicine. It was established at the National Institutes of Health in 1991 to create the National Center for complementary and alternative Medicine (NCCAM),[5] a center charged to conduct and support basic research in the effectiveness and identification of complementary and alternative medicine treatments and systems. There is now a large amount of federal funding available to study issues related to complementary and alternative medicine through the NCCAM.

History teaches that some alternative and complementary therapies in widespread use have beneficial effects on the treatment or prevention of disease. Acupuncture, for example, is widely employed around the world as a technique for the management of pain. A number of important medications, including digitalis, quinine, colchicine, and morphine, are plant derivatives that have been known to herbalists and traditional healers for many years.[6] What other plant based compounds have valuable therapeutic properties? Why does prayer or spiritual belief seem to have a positive effect on recovery from illness? These and many other questions about CAM await answers. Then there are the policy questions, many of which have been inadequately debated and studied. For example, why are people in growing numbers turning to alternative therapies? Is this a reaction to inadequacies perceived in the health care establishment or the training of western physicians? Should herbal medications be subject to FDA certification/regulation for safety and efficacy or as "natural" products should they be exempt?

Given these questions and their importance to the health and well-being of our citizens, it is appropriate to study CAM or "integrative" medicine, as some prefer, as an academic discipline. Furthermore, at the John A. Burns School of Medicine of the University of Hawaii (JABSOM), we believe that it is incumbent upon the school to conduct research in areas of particular interest to Hawaii and the Pacific Region. In addition, we have the responsibility for educating the next generation of physicians that will care for the people of our state and region. While CAM is an important issue nationally, it may be even more important here in Hawaii. With our unique blend of cultures and ethnicities, many healing traditions, some of ancient origin, are represented here in our islands. Our local citizens make use of these healing arts frequently, and often in unusual combinations not seen elsewhere. This poses challenging dilemmas for our practicing physicians but unique research opportunities for our scientists. Given the intersection of cultures here in Hawaii, the state is an ideal laboratory for the study of the use, efficacy and safety of alternative therapies. Given the lack of good scientific information about many of these therapies, JABSOM researchers can play an important role by doing credible scientific evaluations of the alternative therapies used in our community. JABSOM can also explore the use of plant extracts and other natural substances as potential, but as yet unknown, therapies. These studies can give patients information to make informed decisions about therapeutic options available to them, can develop new therapies and can provide an opportunity to evaluate how traditional healer and western allopathic physicians can work together to optimize the health of patients.

It is also important for JABSOM's educational responsibilities to teach medical students about the potentials and risks of alternative therapies, as well as their impact on conventional western drugs and therapies. It is important that we take an evidence-based approach to this task and present students with scientific data regarding the efficacy and safety of alternative therapies. We must also discuss with them the use of a nonjudgmental approach to patients using alternative therapies so that patient trust and confidence in western physicians is maintained.

Although few medical schools have yet established departments of integrative medicine, it is clear from many sources that alternative and complementary medicine has become a major public health issue for the Untied States. Congress has recognized this fact by the

Continued on p. 300

Guest Editorial

Theresa Danao, MD
Straub Clinic & Hospital



Complementary and Alternative Medicine is enjoying an upsurge of popularity. More and more, our patients are turning to these methods of healing either as a complement to, or an alternative to western medicine.

The Hawaii State Consortium for Integrative Health Care has been established in response to the increased interest in Complementary and Alternative Medicine. The vision of the consortium is that the people of Hawaii will enjoy increased and timely access to all forms of health care that may be of benefit, including traditional systems of healing, with appropriate scope and standards of practice, and reimbursement that is viable for patient, provider and payer.

The Research Investigators Meeting held at the Hilton Hawaiian Village on September 13, 2000 was held in an effort to describe the state of research into integrative medicine currently taking place in the State of Hawaii. Over forty-five physicians and other healthcare professionals attended the meeting.

The morning session included 5 research presentations of topics as diverse as Tibetan Medicine to the use of Complementary Medicine for Pain Syndromes in Children.

In the concluding afternoon session, nine posters were presented. Topics included a case study on the use of Ginko Biloba, a report by a health insurance provider on the characteristics and satisfaction of acupuncture services and an overview of the Hawaiian healing technique of Pa'ola.

The abstracts included in this issue provide a representative sampling of the topics that were presented at the meeting. It is hoped that this forum for presenting current research in the field of Complementary and Alternative Medicine will become an annual event and will help to advance the knowledge in this field.



Are Heart Transplant Recipients Receiving Cellular Memories from Their Donated Organ? A Heuristic Study

Paul Ka'ikena Pearsall, PhD
President and CEO, Ho'ala Hou; Clinical Professor, University of Hawaii at Manoa



"If you wish to upset the law that all crows are black . . . it is enough if you prove one single crow to be white."

William James

A fifty year old male heart transplant recipient awakened in a cold sweat the night after his operation. He told his nurses that he kept dreaming that he was falling down a flight of stairs. He had reported no more pre-transplant anxiety than most recipients and no consultation from a psychiatrist or clergy was sought prior to his operation or that evening. When the same thing happened on the second and third night, a chaplain was called who in turn requested a psychiatric consultation. The psychiatrist reported that the patient was only bothered that he could not sleep well and attributed no particular significance to the dream. The patient reported that he had never himself fallen down stairs and was not aware of anyone who had. However, the clinical team was, in the words of the reporting psychiatrist, "a bit unnerved, because they knew the source of the heart." It had come from a coed who had passed out drunk in an upstairs bedroom at a fraternity party. When she awoke still intoxicated, she had fallen down a flight of stairs to her death.[1]

This case, like many of those reported by heart transplant recipients, cannot be considered evidential of "cellular memories." There are many possibilities that could explain this report, including but not limited to chance correlation of the dream with a current event, possible information leaked to the recipient on a conscious or subconscious level through television, newspaper accounts, or hospital staff, disrupted sleep or brain patterns related to medications and immunosuppressant drugs, emotional stress, or some pre-existing psychopathology or forgotten trauma.[2,3] But are there plausible hypotheses?

It has been assumed that learning primarily involves the nervous and immune systems and that the heart is merely a pump. Newly developing theories and research related to energy cardiology, neurocardiology, and cardioimmunology posit a broader view of the heart. Living systems theory suggests that all dynamical systems by definition contain recurrent feedback loops that store information and energy to various degrees that could relate to some form of cellular memory.[4] Microtubule memory may also involve some form of system memory process.[5]

Based on several published cases of heart transplant recipients experiencing various kinds and levels of associations with their donors, further study of the plausibility of some type of cellular memory manifesting in these patients seems warranted.[6] In the most recently published set of cases of heart transplant/donor association, two to five parallels per case were observed between changes following surgery and the history of the donors.[7] These cases involved transcripts of audio taped interviews quoted verbatim and correlated with interviews with transplant recipients, recipient families or friends, and donor families or friends. Parallels included changes in food, music, art, sexual, recreation and career preferences, and specific instances of perceptions of names and sensory experiences related to the donors. (e.g. one donor was killed by a gun shot to the face; the recipient had dreams of seeing hot flashes of light in his face.) The total set of findings spanning the ten cases appear to indicate that coincidence or the statistical chance hypotheses may be insufficient to explain these phenomena.

Further study of the issue of cellular memory is difficult. Because of fear of ridicule and/or being seen as psychiatrically disturbed, recipients are often reluctant to share their stories. When they report them to me, it is often done with a sense of embarrassment and with the strictest assurance of confidentiality. When cases are reported at scientific meetings, they are often greeted not with appropriate skepticism and requests for more study but with cynicism, mockery, and unwillingness to consider possible explanations.

The limited number of cases this author has reported and their sporadic and clinical anecdotal nature do not allow conclusions regarding the cellular memory hypothesis. The true incidence of cardiac transplant patients associations with their donor is not known, but stress, illness, surgery, confrontation of mortality, immuno-suppressant drugs, and statistical coincidence seem insufficient to fully explain the 74 cases this author has reported to date. A few anecdotes are collection of stories, but many comparable anecdotes carefully collected and recorded over time become data worthy of examination. If cellular memory or any kind of verified association to an unknown donor is occurring in only some transplant patients, why this group? Is it possible that it is not the transplant, the organ itself, or cellular memory that are related to these stories but some intensified consciousness connection brought about or facilitated by the trauma of near death and the sudden miracle of the gift of a new life? It seems worth the time and attention of open-minded scientists to take a closer look at the white crows.

Continued on p. 300

Energy Fields in Conventional and Integrative Medicine

Frank L. Tabrah, MD
Professor of Physiology and Emeritus Professor of Community Health, John A. Burns School of Medicine, University of Hawaii at Manoa; Medical Affairs Department, Straub Clinic & Hospital



Magnetic fields in medicine go back to Mesmer, a Parisian glass harmonica-playing eighteenth century rascal who, dressed in bright violet robes, developed a magnificent practice in his parlor, treating hysterical women with bar magnets and iron-laced water. The final measure of his success was his death in 1815 as a pauper, and the somewhat doubtful metamorphosis of his earnest but misguided work, into psychiatry.[1]

Far from this dubious legacy, present legitimate magnetotherapy uses specially generated magnetic fields,[2] while spurious futile commercial applications still exploiting Mesmer's placebo effects, divert five billion dollars yearly from rational medical expenditures.[3]

A few basics:

There are electrostatic fields—witness the sparks when you stroke a dry cat—and there are electro-magnetic fields, produced by current flowing through a wire or a coil—the heart of all electric motors. Only the electromagnetic field, and only if it is moving in relation to tissues, appears to have any measurable clinical effects. These result from induced current, quantified in Faraday's laws.[4]

A stable, essentially motionless field like that of the earth is produced by static magnets—those in the mattresses, discs, bars, horseshoes, earrings, bracelets and other widely marketed configurations, despite their popularity, have no explicable interaction.

Conversely, electromagnets, with their moving fields driven by various current patterns have a successful history of treatment applications, particularly for stimulation of bone repair by inducing a current flow in the bone similar to the specific waveform discovered by Fukada when he physically stressed bone matrix in his piezoelectric studies of crystals.[5-8]

Application of this principle led in 1980 to our trial of a 12 week, 10 hour daily electromagnetic field exposure of the non-dominant forearms of 20 osteomyelitis-prone women, after 108 weeks of serial bone density determinations. A 12% increase in bone density was found in the treated arms.[9]

Comparable effects have been reported in many animal models,[9] as well as in worldwide fracture therapy. Although the exact bone enhancing mechanism is unknown, these consistent results suggest the possible application of scaled-up equipment using a full-field generating bed, for example, for an osteoporotic patient, or in the management of the bone density loss of microgravity.[11]

Although most clinical applications of oscillating magnetic fields have used energy levels well below 10 milliTesla (10 gauss), recent clinical development of concentrated fields of 2-3 Tesla (over 20,000 gauss) has made possible two new clinical uses, one, the 80% successful treatment of major depression without classical electroshock therapy, using induction through the skull,[12] and another, the treatment of urinary incontinence patients by stimulation of pelvic structures (nerves and musculature) by a series of "induced" Kegel exercises at 50 Hz, while they are comfortably seated in the treatment chair. Sixty–five percent of patients report marked improvement or cure after the prescribed treatment course.[13]

In contrast to the quantifiable effects of the relatively high energy time-varying fields long used in conventional medicine, there exists a separate and unrelated world of magnetic "therapy," "aura manipulation," unexplained "body forces," and "energy fields" that have no demonstrable basis in rational chemistry, physics, or physiology other than possible psychosomatic effects. Controlled studies repeatedly debunk the mysticism on which many of these therapeutic "systems" ride—none, better, for example than the work that has punctured the proliferation of Kirlian photography, and Emily Rosa's landmark 4th grade science project published in JAMA.[14]

The astonishing popularity of small static magnets that are worn, walked on in a million shoe soles, slept on, and revered by thousands, delightfully demonstrate the triumph of marketing, as well as hope over reason.

Static magnets contacting the body have no more effect on one's physiology than refrigerator door magnets have on the food inside. Magnetic baubles may satisfy, but only by their presence. By engendering satisfaction, perhaps they earn their keep however; any miniscule electrical energy induced by these magnets by Faraday induction in flowing blood, can have no conceivable biologic effect, lying as it does, in the range of one ten billionth of the normal electrical and thermal energies in tissues.[15,3]

Clearly it is the responsibility of the scientifically literate to continuously clarify, quantify, and document mechanisms and outcomes of all therapeutic interventions, truly separating knowledge from nonsense.

References

1. Garrison FH. *An Introduction to the History of Medicine.* Philadelphia, London: W.B. Saunders Co.; 1929.
2. Pilla AA, Muehsam DJ, Markov MS, Sisken BF. EMF signals and ion/ligand binding kinetics: prediction of bioeffective waveform parameter, *PMID.* 10228567; UI: 99245251.
3. Ramey DW. Magnetic and electromagnetic therapy In: *The Scientific Review of Alternative Medicine.* Promethus Books; 1998.
4. The New Encyclopaedia Britannica, 15th Edition, Vol. 18, Pg. 245. Faraday's Law of Electromagnetic Induction.

Continued on p. 300

Chronic Low Back Pain Disability a Modern-Day Epidemic (Doctoral Research Proposal)

Robert G. Hirokawa, DC, MPH
Doctoral Graduate Student, John A. Burns School of Medicine; Department of Public Health Sciences and Epidemiology, University of Hawaii at Manoa



Introduction/Statement of the Problem

Low back pain is an almost universal human condition.[1] It has affected man throughout most of recorded history.[2] It is a major contributor to human suffering and disability and has enormous associated social costs.[3] Chronic disability associated with low back pain has reached epidemic proportions despite advances in knowledge and greater resources.[1] Persons suffering from low back pain represent two distinct populations. In approximately 80% of persons afflicted with low back pain, the problem seems to resolve no matter what type of care is provided while the remaining 20% of persons with low back pain seem destined to a life of chronic pain and disability regardless of the type of care provided.[4] It is this latter group of individuals that is associated with the enormous financial and societal costs of low back pain in western societies.[5]

Historically, low back pain has been operationalized into two broad categories–acute low back pain and chronic low back pain disability. Various studies have identified several factors that may be associated with the occurrence of acute low back pain including smoking,[6,7] obesity,[8] socio-economic status (operationalized by job classification),[9] and certain psychological traits (depression, type A behavior, and hypochondria).[10-13] Most, if not all of these studies of acute low back pain have been conducted on adult populations. However, recent investigation has suggested that incident (acute) low back pain may be occurring in early adolescence rather than adulthood as previously assumed.[14] This finding may require future studies investigating risk factors for acute low back pain to include adolescents as well as adults in their samples.

On the other hand, Waddell describes chronic pain, chronic disability, and chronic illness behavior associated with low back pain as a dissociation from the physical back problem. There is usually little evidence of remaining tissue damage in patients with chronic low back pain disability. Emotional distress, depression, and disease conviction become increasingly associated with the pain. Chronic pain usually becomes self-sustaining and does not respond well to traditional medical management.[2] Various psychological states and traits are thought as the main promoters of chronic low back pain disability. Psychological conditions that have been suggested as possible determinants of chronic low back pain disability include depression,[15-17] hypochondriasis and hysteria,[17] inappropriate coping strategies,[18,19] and being self-centered.[20] Various forms of abuse may also play a role as a determinant of chronic low back pain disability. Females with a history of being battered by their partner were found to be at greater risk for development of Post Traumatic Stress Disorder, depresssion, chronic pain, and substance abuse.[21] Chronic pain and depression may be consequences of past childhood sexual abuse as well.[22] Alcohol abuse has also been suggested as a possible determinant of chronic low back pain disability.[16,23] Non-medical factors such as being on workers' compensation benefits and pending litigation have been found to be predictors of chronic low back pain disability.[20] Finally, ineffective or inappropriate medical care has also been implicated as a possible determinant of chronic low back pain disability.[2,4]

Null Hypothesis

1. Individuals with acute low back pain and pre-disposing psychological risk factors develop chronic low back pain disability at the same rate and frequency regardless of the type of healthcare professional (medical physician versus chiropractor) providing care for their low back pain.
2. Low back pain sufferers who seek the services of medical physicians versus chiropractors do not differ demographically. Their severity of injury (pain intensity) and psychological profiles are homogeneous.

Methods

This study will be carried out prospectively, focusing on outcome data. Acute low back pain patients will be followed over a 3-month period. Anxiety, depression, functional capacity, general health status, work disability, and pain intensity will be the main outcomes variables measured at entry into the study and at 3 months follow-up. Socio-demographic information will also be collected at entry. Patients treated by medical physicians will be compared with patients treated by chiropractors. This comparison will provide information on outcome effectiveness between these two provider types.

A sample size of 400 participants, 200 from chiropractic clinics and 200 from various medical facilities will be utilized. Participants will be adults (18 years or older), residing on the island of Oahu, seeking the services of a chiropractic or medical provider with a primary complaint of acute low back pain (not more than to 30 days duration, with at least a one year low back pain-free state prior to the most recent episode) of musculoskeletal origin.

Patients with low back pain secondary to organic dysfunction or

malignancy, patients with pending litigation associated with the low back pain (MVA, slip/fall), or patients being treated for depression will be excluded from the study.

The Beck's Depression Inventory, Oswestry Questionnaire (function), Short Form 12 (general health status), anxiety scale (not yet chosen), and Visual Analog Scale (pain intensity) will be the indices used to measure outcomes of the two provider types.

Each site (chiropractic and medical) will be given a predetermined number of packets (survey instruments and consent forms) to be handed out to prospective participants that fit the selection criteria (time one). The enrollment period will continue until all of the packets are handed out and completed. The purpose of the study will be explained to each prospective participant verbally by the receptionist/nurse. A written explanation will also be provided. Informed consent will be obtained. Confidentiality will be assured. Participants will be able to complete the surveys in approximately 10-15 minutes.

Each participant will be mailed a second packet (identical survey instruments contained in the first packet, time two) 3 months after entering the study. Participants who fill out and return the surveys will be compensated for their efforts.

Statistical analysis will include calculations of descriptive statistics of sample demographics, correlation coefficients of covariates, logistical regression, and multiple linear regression. The main independent variable will be provider type. The main dependant variables will include depressive symptoms, anxiety, general health status, pain intensity, functional capacity and work disability.

Conclusion

It is hoped that this outcome study will shed at least a "glimmer of light" into this complex public health crisis–the chronic low back pain disability epidemic. Obviously, this study is attempting to understand only a very small part of this serious societal burden. It is by no means an attempt at a major "breakthrough". Nevertheless, information garnered from this study will add to our knowledge base.

References

1. Waddell G. Low back disability. A syndrome of western civilization, *Neurosurgery Clin of North America.* 1991;2:719-38.
2. Wadell G. Keynote address for primary care forum. Low back pain: A twentieth century health care enigma, *Spine.* 1996;21:2820-25.
3. Carey T, Evans A, Hadler N, Lieberman G, Kalsbeek W, et al. Acute severe low back pain. A population based study of prevalence and care-seeking, *Spine.* 1996;21:339-44.
4. Deyo R, Phillips W. Low back pain. A primary care challenge, *Spine.* 1996;21:2826-32.
5. Frymoyer J, Cats-Baril W. An overview of the incidence and costs of low back pain, *Orthopedic Clin of America.* 1991;22:263-71.
6. Leboeuf-Yde C, Yashin A, Lauritzen T. Does smoking cause low back pain? Results from a population-based study, *J Manipulative Physiol Ther.* 1996;19:99-108.
7. Brynhildsen J, Bjors E, Skarsgard C, Hammar M. Is hormone replacement therapy a risk factor for low back pain among postmenopausal women?, *Spine.* 1998;23:809-813.
8. Lean M, Han T, Seidell J. Impairment of health and quality of life in people with large waist circumference, *Lancet.* 1998;351:853-856.
9. Leino-Arjus P, Hanninen K, Puska P. Socioeconomic variation in back and joint pain in Finland, *European J Epidemiol.* 1998;14:79-87.
10. Mannion A, Dolan P, Adams M. Psychological questionnaires: Do 'abnormal" scores precede or follow first-time low back pain?, *Spine.* 1996;21:2603-2611.
11. Von Korff M, Le Resche L, Dworkin S. First onset of common pain symptoms: a prospective study of depression as a risk factor, *Pain.* 1993;55:251-258.
12. Floodmark B, Aase G. Muskoloskeletal symptoms and type A behavior in blue collar workers, *British J Industrial Med.* 1992;49:683-687.
13. Sivik T. Personality traits in patients with acute low-back pain, *Psychother Psychosom.* 1991;56:135-140.
14. Burton A, Clarke R, McClune T, Tillotson K. The natural history of low back pain in Adolescents, *Spine.* 1996;21:2323-28.
15. Polatin P, Kinney R, Gatchel R, Lillo E, Mayer T. Psychiatric Illness and chronic low-back pain. The mind and the spine – Which goes first?, *Spine.* 1993;18:66-71.
16. Atkinson J, Slater M, Patterson T, Grant I, Garfin S. Prevalence, onset, and risk of psychiatric disorders in men with chronic low back pain: a controlled study, *Pain.* 1991;45:111-121.
17. Hansen F, Biering-Sorensen F, Schroll M. Minnesota Multiphasic Personality Inventory profiles in person with or without lowback pain, *Spine.* 1995;20:2716-2720.
18. Burton A, Tillotson K, Main C, Hollis S. Psychosocial predictors of outcome in acute and subchronic low back trouble, *Spine.* 1995;20:722-28.
19. Hasenburg M. Marienfeld G, Kuhlendahl D, Soyka D. Risk factors of chronicity in lumbar disc patients. A prospective investigation of biologic, psychologic, and social predictors of therapy outcome, *Spine.* 1994;19:2759-2765.
20. Gatchel R, Polatin P, Mayer T. The dominant role of psychosocial risk factors in the development of chronic low back pain disability, *Spine.* 1995;20:2702-2709.
21. Smith P, Gittleman D. Psychological consequences of battering. Implications for women's health and medical practice, *NCMJ.* 1994;55:434-439.
22. Roberts S. The sequelae of childhood sexual abuse. A primary focus for adult female survivors, *Nurse Practitioner.* 1996;21:45-52.
23. Sandstrom J, Anderson G, Wallerstedt S. The role of alcohol abuse in working disability in patients with low back pain, *Scand J Rehab Med.* 1984;16:147-149



ALAINA L. FUKUI-GOO
RA., GRI., Notary Public
Marcus & Associates, Inc.
(808) 691-3847 DP
(808) 839-7446 Ext. 307
alainaf@marcusrealty.com

Residential Real Estate Sales
•
Specialize in assisting medical and dental professions
•
Aloha 'Āina Award Nominee 2000 & 2001
•
RELO member – Relocation Specialist
•
Member – Council of Residential Specialists
•
Honesty, Loyalty, Integrity... RESULTS!
"Serving you in the Spirit of Aloha"

The Emerging Field of Yoga Therapy

Karen Chandler, MS
Lead Member, Yoga Committee, CAM Professional Branch, Hawaii State Consortium for Integrative Health Care; Instructor, Yoga in Nature Retreats, Kapa'au, Hawaii

Yoga therapy is recognized by a growing number of medical practitioners, patients, and insurance companies as an effective treatment of physical and psychological conditions ranging from hypertension and emotional distress to chronic back pain, asthma and diabetes.[1-3] It shares traditional yoga's broad view of the human being as an integrated mind-body system, interacting with outer nature, ethereal forces, and past life actions (karma).[4-6]

Yoga, itself, is a classical Indian science and philosophy of personal transformation, dating back to over 2000 BC. It is a highly sophisticated system of postures, breathing and mental techniques that lead one to healthy, higher states of consciousness, and ultimate awareness of one's pure, free, non-suffering nature. Yoga shares its origins with Ayurveda, India's native naturopathic science, and offers a broad, transpersonal context for the emerging field of yoga therapy, a new discipline that yoga scholar, George Feuerstein describes as "...a first attempt to integrate traditional yogic concepts and techniques with Western medical and psychological knowledge."[1]

The yogic view of health differs from the more mechanistic view of the human system often recognized in the West. In yoga, health includes peace of mind and the balanced functioning of energetic pathways, subtle bodies, and spiritual centers, in addition to the proper functioning of internal organs and physiological systems of the body-mind complex. Health is both a by-product of and a means towards yoga's transcendent goals. Hatha yoga, the system of cleansing practices (kriyas), physical poses, (asanas), and breathing techniques (pranayama) most often practiced in the West, is part of an "eight-limbed" system that includes deeper states of awareness, ethical living and rules of personal conduct.

There are several current approaches to hatha yoga in the West that have developed yoga's therapeutic potential. These include Viniyoga, Kripalu Yoga, Phoenix Rising Yoga, Integrative Yoga Therapy, and Iyengar Yoga. As Feuerstein points out in his review on yoga therapy, BKS Iyengar, founder of Iyengar Yoga, has, more than any other teacher, developed hatha yoga for therapeutic purposes through precision of alignment and the use of various props and therapeutic sequences.[1] Viniyoga teacher, Gary Kraftsow of Maui, has also explored the therapeutic uses of yoga, and has authored a book on yoga therapy. In California, the Yoga Research and Education Center in California is creating a database of medical and scientific studies on yoga. This resource will be available to researchers and teachers, alike.

Unlike other body therapies, that act on single organs or systems of the body, yoga engages the whole person. Practitioners actively participate in their own health through coordinated total body movements and breathing under the quiet meditative focus of the mind. Health benefits of yoga postures (asanas) and breathing techniques (pranayama) include the following: improved circulation, respiration, heart and other organ function,[5,7,8,9] reduced blood pressure,[10] balanced mental functioning[11] increased flexibility and muscle strength, and the restructuring of the tissues and supporting musculoskeletal system of the body.[2,5,6] Hatha yoga also promotes an acute sense of body awareness, to help prevent new or recurring illness and injury, and to develop healthy lifestyle habits.[1,12,13,14]

According to Feuerstein, the earliest medical studies on yoga were conducted at the Yoga Institute in Santacruz, Bombay, founded in 1918. Other research centers include Kivalyadharma in Lonavla, founded in 1924. In the West, the Yoga Research and Education Center (YREC) in California, established by Feuerstein, is currently creating a data base of medical and scientific studies on yoga, as a resource for researchers and teachers. Here in Hawaii, the Hawaii State Consortium for Integrative Health Care has formed a yoga committee within its CAM Professions Branch to explore the possibility of medical research in yoga, as well as yoga education, and training in yoga therapy.

Becker summarized a number of medical studies on yoga in a recent review: "Uses of Yoga in Psychiatry and Medicine".[2] These studies document yoga's effective role as the sole or adjunct treatment in a variety of disorders: from chronic pain[15] and carpal tunnel syndrome[3] to asthma,[7] diabetes,[9] cardiac dysfuncion,[8] seizures,[11] and hypertension.[10]

Schmidt et al (1997),[8] for example, found a substantial reduction in cardiovascular risk factors and hormones during a comprehensive, residential, 3-month Kriya yoga training and vegetarian nutrition study. A definitive study by Nagendra and Nagarathna (1986)[7] followed asthmatic individuals for up to 54 months, who had initially participated in yoga training. They showed a highly significant improvement in most of the specific parameters, and reduction in the use of medication. Jain et al (1993)[9] found a decrease in rates of hyperglycemic and hypoglycemia as well as in the need for oral hypoglycemic drugs after 40 days of training in yogic techniques. Yoga has also been shown as an effective practice for maintaining health and a sense of greater well-being in healthy individuals.[13,14]

Despite the number of documented research studies, investigators and scholars point out the need for more research, including illness-specific studies and longitudinal studies,[1] and open trials to examine claims by yogis on the efficacy of yoga for various conditions.[2] Challenges facing the investigator include the need for consistent and often long-term practice by participants before results are available; difficulties involved in obtaining a large consistent sample size; potential bias through the effect of individual yoga instructors

on study participants; as well as the complexity of interventions and the inability of western science to detect, measure, or control for yoga's more subtle balancing and healing mechanisms.

There is also a need to further educate healthcare professionals and the public in the benefits and applications of yoga. As Becker points out, health care providers rarely prescribe yoga as either a treatment or preventative, lifestyle practice.

Feurstein predicts a bright future for yoga therapy. He notes the recent interest by health insurance companies in including yoga and yoga therapy into their programs, and the continued development of higher professional standards in yoga therapy training. He and others caution us, however, against shallow training in yoga therapy, and against 'yoga reductionism' or a too simplistic view and application of the yoga's larger holistic and spiritual science. They also remind us that yoga therapy is, in Feuerstein's words "...still in the process of defining itself both relative to medical and psychiatric professions and the India yoga tradition."[1]

During this process, traditional yogis need to embrace the trend towards therapeutic yoga as an entry point for new students and potential devotees. Western researchers and yoga therapists need to embrace yoga's broad holistic practices and transpersonal view of human health and existence in order to appreciate, utilize and explain the full mechanisms and benefits of yoga-as-therapy and a preventative lifestyle practice.

Ultimately, it is all "yoga", which means to yoke, or unite, and in our sense, perhaps, to integrate without loss of essence. Whether viewed as a therapy or a spiritual discipline, yoga has the potential to lift us out of a transient life full of suffering and disease, into a state of pure and eternal well-being.

References

1. Feuerstein G. Yoga and Yoga Therapy. Available at: htpp://www.yrec.org/yogatherapy.html. Accessed Sept 10, 2000.
2. Becker I. Uses of Yoga in Psychiatry and Medicine. In; Muskin PR, ed. *Complementary and Alternative Medicine and Psychiatry. V 0119. No. 1.* Washington, DC and London, England: American Psychiatric Press, Inc; 2000.
3. Garfinkle MS, Singhal A, Katz WA, et al. Yoga-based intervention for carpal tunnel syndrome: a randomized trial, *JAMA.* 1998; 280:1601-1603.
4. Hatha Yoga Pradipika (with commentary by Hans-Urlich Reiker). London, England; Thorsons, an Imprint of Harper Collins Publishers; 1992.
5. Iyengar BKS. Yogic Therapy, *Iyengar Yoga Institute San Francisco Review.* Fall 1998;Vol XVI, No.5:14-17.
6. Iyengar BKS. *Light on Yoga.* New York, NY: Schocken Books; 1966.
7. Nagendra HR, Nagarathna R. An integrated approach of yoga therapy for bronchial asthma; a 3-54 month prospective study, *J Asthma.* 1986;23:123-137.
8. Schmidt T, Wijga A, Von Zur Muhlen A, et al. Changes in cardiovascular risk factors and hormones during a three month Kriya yoga training and vegetarian nutrition, *Acta Physiol Scand Suppl.* 1997;640:158-162.
9. Jain SC, Uppal A. Bhatnagar SO, et al. A study of response pattern of non-insulin dependent diabetics to yoga therapy, *Diabetes Res Clin Pract.* 1993;19:69-74.
10. Sundar S, Agrawal SK, Singh VP, et al. Role of yoga in management of essential hypertension, *Acta Cardiol.* 1984;39:203-208.
11. Panjwani U, Selvamurthy W, Singh SH, et al. Effect of Sahaja yoga practice on seizure control and EEG changes in patients with epilepsy, *Indian J Med Res.* 1996;103:165-172.
12. Schatz Pullig M. *Back Care Basics: A Doctor's Gentle Yoga Program for Back and Neck Pain Relief.* Berkeley, CA: Rodmell Press; 1992.
13. Berger BG, Owen DR. Mood alteration with yoga and swimming; aerobic exercise may not be necessary, *Perceptual and Motor Skills.* 1992;75(3 pt 2):1331-1343.
14. Schell FJ. Physiological and psychological effects of hatha-yoga exercise in healthy women, *Int J Psychosom.* 1994;41:46-52.
15. Kabat-Zinn J. An outpatient program in behavioral medicine for chronic pain patients based on the practice of mindfulness meditation: theoretical considerations and preliminary results, *Gen Hosp Psychiatry.* 1982;4:33-47.



HAWAII POISON CENTER

OAHU: 941-4411

NEIGHBOR ISLANDS TOLL-FREE:

1-800-362-3585

Free Hotline 24 Hours a Day.

POISON CENTER TIPS

- Keep the number of the Hawaii Poison Center on or near your telephone.
- If you suspect a poisoning, do not wait for signs and symptoms to develop. Call the Hawaii Poison Center immediately.
- Always keep Ipecac Syrup in your home. (This is used to make a person vomit in certain types of poisoning.) **Do not use Ipecac Syrup unless advised by the Hawaii Poison Center.**
- Store all medicines, chemicals, and household products out of reach and out of sight, preferably locked up.
- A good rule to teach children is to "always ask first" before eating or drinking anything—don't touch, don't smell, don't taste.

Donate to help us save lives.

Mail checks, payable to:

Hawaii Poison Center

1319 Punahou Street, Honolulu, HI 96826

The Use of Pulsed Electromagnetic Fields (PEMF) in Osteoarthritis (OA) of the Knee Preliminary Report

Theresa Danao-Camara, MD, FACP, FACR
Staff Rheumatologist, Straub Clinic & Hospital; Chief, Division of Internal Medicine Subspecialities, Straub Clinic & Hospital
and
Frank L. Tabrah, MD
Professor of Physiology and Emeritus Professor of Community Health, John A. Burns School of Medicine, University of Hawaii at Manoa; Medical Affairs Department, Straub Clinic & Hospital





Magnets are widely used by arthritic patients for symptom control.[1] Clinical benefits have been reported from the intermittent application of pulsed electromagnetic fields to osteoarthritic joints.[2,3] However, published trials have used complex electromagnetic fields generated by cumbersome expensive equipment, limiting true portability and widespread use. We report comparable beneficial effects using a continuous sine wave input to Helmholz coils run on standard household electricity.

Fifteen patients with osteoarthritis of at least one knee as defined by Altman[4] were drawn from the outpatient Adult Rheumatology practice of one of the authors (TDC). Patients had to be older than 18 years and symptomatic in the subject knee for at least one year. Pain had to be incompletely relieved by analgesics, nonsteroidal antiinflammatory drugs (NSAIDs) and physical therapy. No new treatments (intra-articular injection into the subject joint, PT, NSAIDs) were allowed within a month of, and during the study. Stable regimes were continued. Pregnant and premenopausal women not using contraception were excluded, as were patients with pacemakers or medical problems judged unstable.

Subjects applied the supplied magnet to the designated knee for three hours daily for thirty days. They then returned to the clinic for reevaluation, and to receive the second magnet, which was then similarly applied at home.

Of the pairs of magnets sequentially used by each patient, one magnet (hereinafter referred to as the "active magnet") consisted of Helmholz coils delivering a 0.4 milliTesla, peak to peak, electromagnetic field at 60 Hz, in a sine wave configuration (Fig 1.). The other magnet appeared identical in all respects, but the fields affecting the joint were the earth's magnetic field only, plus whatever stray fields the individual might encounter in daily life ("inactive magnet"). Subjects were assigned randomly to receive either magnet first.

Figure 1.— Clinical variables at baseline, after one month of active magnet treatment and after one month of inactive magnet treatment.

	Baseline	Active Magnet	Inactive Magnet
Pain VAS	4.3	2.4	3.1
Function VAS (Pt)	4.3	6.7	4.8
Function VAS (MD)	5.1	6.7	5.2
Morning Stiffness (minutes)	33.5	6.0	21.5
Loss of ROM (degrees)	5.4	2.0	5.2
Tenderness (0-3)	0.8	0.4	1.2
Swelling (0-3)	1.1	0.9	0.9
Circumference (cm)	39.4	40.3	40.3
50 ft walk time (sec)	15.0	14.3	15.6

Abbreviations used in table: VAS – visual analog scale; Pt – patient assessment; MD – physician assessment; ROM – range of motion.

The following data were collected at baseline, at 30 days (end of treatment period with the first magnet), and at 60 days (end of treatment period with the second magnet); patient's assessment of pain, and the patient's assessment of function on a ten centimeter visual analog scale (VAS), minutes of morning stiffness of the subject knee, range of motion, tenderness on an ordinal scale of 0 to 4 (0 = no tenderness, 4 = withdrawal), swelling on an ordinal scale of 0 to 4, knee circumference in cm, and time in seconds for the patient to walk 50 feet. Neither the assessing physician nor the patient knew which magnets were active or not.

Of the fifteen patients enrolled and randomized, there were four early withdrawals from the group that received the inactive magnet—one at three days and two at one week for lack of patient-

Continued on p. 300

Complementary Medicine Techniques to Help Reduce Muscular Pain in the Pediatric Rheumatic Illnesses

David K. Kurahara, MD
Medical Director of Pediatric Rheumatology, Kapi'olani Children's Specialty Center;
Assistant Professor of Pediatrics, John A. Burns School of Medicine, University of Hawaii at Manoa



Complementary medicine techniques may be helpful in the treatment of some of the pediatric pain syndromes. It is important to view these techniques as complementing standard medical care for these illnesses, as there still is a requirement for antiinflammatory and immuno-suppressant medications to combat the crippling effects of these illnesses. However, certain techniques like massage therapy, biofeedback, and acupuncture may be helpful in relieving some of the pain associated with these syndromes from muscular spasm and joint contracture.

Two of the more common illnesses, which cause pain in children, include Juvenile Rheumatoid Arthritis (JRA) and Myofascial Pain Syndrome (MPS). These illnesses represent sides of a spectrum of illnesses seen in a Pediatric Rheumatology clinic. JRA represents one of the more common inflammatory rheumatic illnesses in children, whereas MPS represents one of the most common causes of muscular pain. Some patients with JRA develop secondary MPS from postural problems and muscular spasm, and can be debilitated from this condition. It is important to recognize this possibility so these patients are not prescribed increasingly powerful immunosuppressants, when in reality, it is the secondary MPS which is causing them the increase of pain.

One complementary technique we have used in our clinic with a significant amount of success is massage therapy. This technique is especially helpful in MPS, as it relieves muscular spasm, contracture, and is helpful in elongating shortened myofascial segments.[1-3] Other complementary techniques used in this population of patients include acupuncture and trigger point injections.[1] It can not be stressed enough that attention must be paid to what activity caused this muscular knotting in the first place. Appropriate counseling and a stretching/strengthening program should then be given.

Massage therapy has been helpful in the literature in JRA. An intensive study showed impressive results from massage therapy of children by their parents. The parents gave their children a daily massage for 30 days. A control group received relaxation techniques. The massage therapy group with JRA had marked decreases in subjective pain, observed pain, and tender trigger points after the 30 days, all with statistically significant results.[2] The pain was especially relieved at night. This finding is probably attributable to the observation that many JRA patients develop secondary MPS. The benefit from massage therapy is most likely derived from decreasing muscular spasm and contracture around inflamed joints. Also from relieving muscular spasm in the backs of these JRA patients which is caused by awkward gaits and disrupted posture due to the pain in their joints.

With each complementary technique, we as responsible health care providers need to study and insure that these methods provide relief and are safe for our patients. Each technique should be elegantly studied, using many indicators to measure health outcome. We need to be careful that our patients do not discontinue needed antiinflammatory/immunosuppressant medications. The combination of respected standard medical therapy and some complementary techniques like massage therapy may be useful to give these patients with chronic arthritis an increased amount of relief.

References

1. Rachlin ES. *Myofascial Pain and Fibromyalgia. Trigger Point Management.* St. Louis, MO: Mosby-Year Book, Inc; 1994.
2. Field T, Hernandez-Reif M, Seligman S, Krasnegor J, Sunshine W. Juvenile Rheumatoid Arthritis: Benefits from Massage Therapy, *J Ped Psych.* 1997;22(5):607-617.
3. Nagata CB, Tsujii Y. Myotherapy: A New Approach to the Treatment of Muscle Pain Syndromes, *J Manual & Manipulative Therapy.* 1997;5(2):87-90.

Until There's a Cure,

There's the

American Diabetes

Association

Ginko, Vioxx and Excessive Bleeding – Possible Drug-Herb Interactions: Case Report

Tamar Hoffman, MD
Honolulu Medical Group



A 69 year old Chinese man with history of mild diabetes, hypertension and arthritis presented to medical care Feb. 2000 complaining of right leg weakness and unsteady gait 8 days after injury to the left side of head with a baseball. There was no loss of consciousness. His medications included Zestril, Glyburide, and Vioxx. He was not taking Aspirin. History of supplement use was not obtained.

Examination confirmed right sided weakness and unsteady gait, no other abnormality identified. Emergency CT scan of head revealed a large subacute left subdural hematoma. CBC, PT & PTT were WNL. Bleeding Time was not done. Emergency evacuation of the hematoma was performed and well tolerated, no evidence of excessive bleeding intra - or - post operatively. The patient recovered and his weakness resolved. Follow-up CT scan was obtained 2 months postoperatively and revealed 3 new small subdural hematomas at different stages. There was no additional injury. No history of excessive bleeding tendency. History of supplements use was obtained, patient has been using the following supplements "for years": Ginkgo Biloba-253.4 mg daily (for memory), Siberian Ginseng -162 mg daily, Fish oil tablets-1000 mg daily, Vit E-30 IU daily and multivitamins. He was not taking any Garlic or Ginger supplements. His examination was WNL, there was no neural deficit and no evidence of ecchymosis. Lab revealed abnormal Bleeding Time at 17.5 (nl<8); CBC, PT & PTT - WNL. All supplements and Vioxx were discontinued, and patient was observed conservatively. One week later Bleeding Time returned to normal, and remained normal upon resuming low dose Vioxx (7.5 mg daily). Patient has remained neurologically stable to this date, repeat CT was not done yet.

Discussion

Ginkgo Biloba contains several active ingredients including Ginkgolides, which have a variety of pharmacological actions. Ginkgolide B is a potent inhibitor of Platelet Activating Factor.[1-3] One study documented inhibition of platelet aggregation by Ginkgo, with normal coagulation parameters including Bleeding Time.[4] There have been several reports of excessive bleeding associated with using Ginkgo alone,[5,6] or together with Aspirin,[7] or Coumadin.[8] The question arises whether Ginkgo by itself, or in combination with Vioxx contributed to the occurrence of the traumatic as well as the recurrent, spontaneous, subdural hematomas.

In view of the increasing popularity of Ginkgo, it is prudent to explore further the potential complications of isolated use, as well as in combination with other herbs or Rx medications, and establish guidelines and limitations for its use, possibly utilizing laboratory parameters.

This case illustrates again the importance of including use of supplements in the history of all our patients.

References

1. Blumenthal M. Ginkgo Biloba Leaf Extract In: Blumenthal M, Goldberg A, Brinckmann J, eds. *Herbal Medicine Expanded Commission E Monographs*. Newton, MA: Integrative Medicine Communications; 2000:160-169.
2. Braquet P. The Ginkgolides: Potent Platelet-Activating Factor Antagonists isolated from Ginkgo Biloba L.: Chemistry, pharmacology and clinical applications, *Drugs Of The Future*. 1987;12(7):643-699.
3. Chung KF, et al. Effect of Ginkgolide mixture (BN 52063) in antagonizing skin and platelet responses to platelet activating factor in man, *Lancet*. 1987;1:248-251.
4. Guinot P, et al. Tanakan Inhibits Platelet-Activating-Factor-induced Platelet Aggregation in healthy male volunteers, *Haemostasis*. 1989;19:219-223.
5. Rowin J, et al. Spontaneous bilateral subdural hematomas associated with chronic Ginkgo Biloba ingestion, *Neurology*. 1996;46:1775-1776.
6. Vale S. Subarachnoid hemorrhage associated with Ginkgo Biloba, *Lancet*. 1998;352:36.
7. Rosenblatt M, et al. Spontaneous Hyphema associated with ingestion of Ginkgo Biloba Extract, *New England Journal of Medicine*. 1997; 336:1108.
8. Matthews M. Association of Ginkgo Biloba with intracerebral hemorrhage. *Neurology*. 1998;50:1933-1934

Aloha Laboratories, Inc.
...When results count

CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

David M. Amberger, M.D.
Laboratory Directory

Phone: (808) 842-6600
Fax: (808) 848-0663
E-Mail: results@alohalabs.com
http://www.alohalabs.com

Patient Characteristics and Satisfaction for Members Using Acupuncture Services

Deborah A. Taira, ScD
Research Manager/Health Economist, Hawaii Medical Service Association
and
Richard S. Chung, MD
Vice President & Medical Director, Care Mangement, Hawaii Medical Service Association

Consumer demand for integrating complementary alternative care with allopathic medicine has been growing. In fact, expenditures for complementary care have risen from $13.7 b in 1990 to $21.2 billion in 1997.

In July 1999, the Hawaii Medical Service Association (HMSA) began offering discounts on alternative therapies to its 600,000 members. The discount program was based on partnerships with Landmark Health-care, Inc., to provide acupuncture and nutritional supplements, and with American Specialty Health Networks to provide massage therapy and fitness memberships. As part of the agreement, acupuncturists provided HMSA with a list of users on a monthly basis from July 1999 to June 2000.

The goals of this study were to:

- Examine the characteristics of HMSA enrollees who used acupuncture services.
- Compare satisfaction with allopathic services for acupuncture users and nonusers using data from the 1999 Member Satisfaction Survey.

Methods

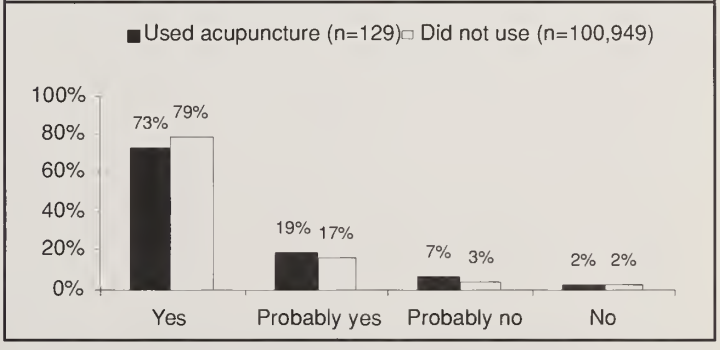
A total of 788 unique member identification numbers were submitted to HMSA by acupuncturists, of which 217 were unmatchable to enrollment files due to incomplete or incorrect identification numbers. Of the remaining 442 members, 129 responded to the 1999 HMSA Member Satisfaction Survey. Only members who had visited a physician in 1999 were eligible to receive the Member Satisfaction Survey.

Results

The mean age of acupuncture users (53 years, range 18 to 93) was similar to nonusers who responded to the member satisfaction survey. Sixty-six percent of acupuncture users were female, compared with 60% of nonusers who responded to the survey. Acupuncture users were more likely to be Caucasian and Hawaiian than nonusers. The self-report health status of acupuncture users was slightly higher than nonusers who responded to the Member Satisfaction Survey, with 26 percent of acupuncture users reporting excellent health compared to 17 percent of nonusers.

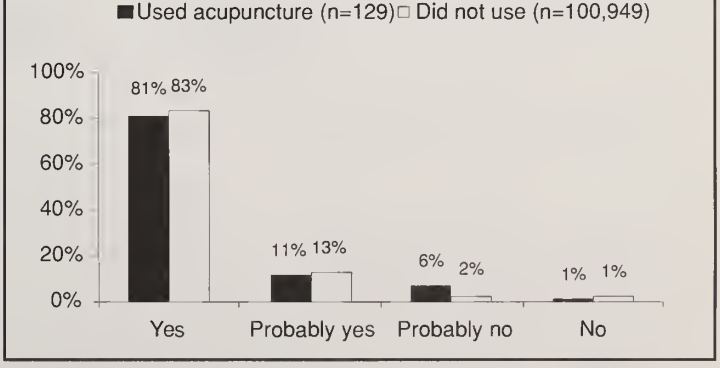
Mean patient ratings of access to physician services (p=0.66) and office experience (p=0.85) were the same for acupuncture users and nonusers. Despite similar satisfaction scores, members who used acupuncture were less likely to say they would recommend their physician than nonusers (Figure 1, p=0.07).

Figure 1.—Recommend physician



Acupuncture users were also significantly less likely than non-users to report that they would seek help again from their physician (81% vs. 83%, p=0.05).

Figure 2.— Seek help again



Limitations

To be included in this study, acupuncture users had to meet all the following criteria:

- HMSA enrollee
- Useable ID number submitted to HMSA
- Had a physician visit during 1999
- Received and responded to a member satisfaction survey in 1999
- Visited an acupuncturist who voluntarily submitted member identification numbers to HMSA

Thus, the study population includes only a small fraction of acupuncture users in Hawaii. Because the member satisfaction survey was only sent to members who had visited a physician in 1999, the sample is biased toward less healthy members. Also, because submission of member identification numbers to HMSA by providers was voluntary, we have an incomplete list of HMA members who used acupuncture services.

Conclusion

This study found that acupuncture users were less likely than nonusers to be in good health and to be Caucasian or part-Hawaiian. While there were no differences in patient ratings of access or office experience, acupuncture users were less likely to recommend or to seek help again from their doctor. This suggests that some needs of acupuncture users are not being met by traditional physician services.

Future studies, which link acupuncture use with administrative (claims) data, are needed to determine the utilization patterns of acupuncture users (inpatient, outpatient, drug, and physician services) and to examine the disease profiles of acupuncture users.



Schering/Key Pharmaceutical

Claritin-D 12 Hour (5 mg loratadine/120 mg pseudoephedrine sulfate, USP) Extended Release Tablets

Claritin-D 24 Hour (10 mg loratadine/240 mg pseudoephedrine sulfate, USP) Extended Release Tablets

Claritin RediTabs 10 mg (loratadine rapidly-disintegrating tablets)

Claritin Syrup (loratadine) 10 mg per 10 mL

Once-a-day nasonex (mometasone furoate monohydrate) Nasal Spray, 50 mcg

Claritin 10 mg TABLETS (loratadine)

Tequin gatifloxacin

Velvet Agena-Chee
Senior Sales Representative
Voice Mail (800) 782-2347
Box 3858

Donn keoki Arizumi
Pharmaceutical Representative
Voice Mail (800) 544-5420
Box 8058

Shawn Brady
Sales Representative
Telephone (808) 387-1409
Voice Mail (800) 554-5420
Box 1342
FAX (808) 373-1772
E-Mail shawn.brady@spcorp.com

Mark Buquoi
Sales Representative
Telephone (808) 384-3862
Voice Mail (800) 544-5420
Box 9795
FAX (808) 841-6105

Dennis M. Hamamura
Senior Pharmaceutical Rep.
Telephone (808) 671-0225
Voice Mail (800) 544-5420
Box 8774
FAX (808) 671-0817

Carol K. Honda
Sales Representative
Voice Mail (800) 554-5420
Box 8322
FAX (808) 593-1776

Rachelle Hyde
Sales Representative
District Trainer
Voice Mail (800) 782-2347
Box 3861

Caroline Perry
Sales Representative
Voice Mail (800) 554-5420
Box 1274
E-Mail Caroline.perry@spcorp.com

Brian Souza
District Account Representative
Telephone (808) 394-9475
Voice Mail (800) 554-5420
Box 6811
FAX (808) 394-9475
E-Mail brian.souza@spcorp.com

Guest Editorial

Martina L. Kamaka, MD
Coordinator of Faculty and Curriculum Development
University of Hawai'i
John A. Burns School of Medicine
Native Hawaiian Center of Excellence
Vice-President of 'Ahahui o nā Kauka

Improving the health of Native Hawaiians depends largely on improving early access to diagnosis and care, which, in turn, relies on a system of culturally competent providers who are attuned to the values and health beliefs of their Hawaiian patients. On August 9-13th, 2000, a group of 23 physicians traveled to the island of Kaho'olawe to partake in an innovative conference entitled, "Increasing Cultural Competency in the Native Hawaiian Physician." The Straub Foundation, the Native Hawaiian Center of Excellence and the 'Ahahui o nā Kauka (Association of Native Hawaiian Physicians) designed the curriculum that centered on the issue of cultural competency, with a twist. The physicians would take part in an intense cultural experience, and the curriculum would be delivered in that context. Conference planners hoped to show that such a program would help to bridge the gap that exists between the Western training of the physicians and traditional approaches to Native Hawaiian health and healing. The underlying premise was that coupling a cultural competency program with a cultural immersion experience would enhance the success of the curriculum. The physician participants had the following backgrounds: sixteen were Native Hawaiian (*Kānaka Maoli*), one was Maori, one was Filipino, one was Native American (Comanche), two were Asian and two were Caucasian. All physicians had an interest in Native Hawaiian or Pacific Islander health.

Historical Background

The island of Kaho'olawe is the eighth largest island in the Hawaiian archipelago. In times of old, it was home to dryland farmers, adze workers and fishing families. Ancient navigators studied the channels, winds and clouds atop Pu'u Moaulaiki, and master craftsman set up work-shops near the adze quarry at Pu'u Mōiwi. In the 19th century it was used as a penal colony for Hawaiians who violated new Christian moralities, before being used by cattle, sheep and goat ranchers. In 1941, it was appropriated by the US government and used as a target range for military exercises. After a long and difficult political struggle spearheaded by the grassroots Protect Kaho'olawe 'Ohana, President George Bush ordered the military to stop using the island for bombing and target practice in October of 1992. In 1993, the United States Congress voted to return the title of the island to the State of Hawai'i and authorized the funding to clean up the unexploded ordnance. On May 7, 1994, the deed returning the island to the people of Hawai'i was signed. Kaho'olawe now serves as a "cultural reserve" and is being held in trust for the future "sovereign native Hawaiian entity."

One term of settlement of the original lawsuit provides monthly access to the island by the Protect Kaho'olawe 'Ohana (hereafter referred to as the 'Ohana) for educational, scientific, cultural and religious purposes. As a part of the experience, participants are taught the history of the island, visit archaeological and cultural sites, and aid in ecological restoration projects. Restoration work is crucial since severe erosion has occurred as a result of the 50 years of bombing and earlier grazing by goats, sheep and cattle. Unfortunately, it appears that it will be impossible to clear the land of all the ordnance in spite of an ongoing multimillion-dollar cleanup by military contractors. The island has become a symbol of hope, of the land and of the Native Hawaiian people. By helping to heal Kaho'olawe, *Kānaka Maoli* heal themselves.

Cultural Immersion Activities

Activities enabled physicians attending the conference to experience traditional Native Hawaiian values. The values of *aloha* (to love, care for), *mālama* (to take care of), *'imi'ike* (to seek knowledge), *loko maika'i* (to share), *laulima* (many hands working together), *kōkua* (to help out), *'ohana* (family living) and *olakino maika'i* (to be healthy) were incorporated into the cultural immersion experience.

Facilities on Kaho'olawe are limited. There is no electricity or running water. The camp consisted of a field kitchen, two portable toilets and traditional style *hale hālāwai* (meeting house) built by members of the 'Ohana. All food, water, supplies, and camping gear were brought over by boat. The group was dropped off outside of the surfline and then stayed in the water passing gear into shore. This required cooperation, as lines had to be formed in the water to enable an efficient system of passing all gear and supplies from one to another. This same assembly line system was employed at the airport, at the hotel, and getting on and off the buses and the boats. The group stood out from the other visitors because their "luggage" was all waterproofed in a triple layer of 3-millimeter black garbage bags sealed off with duct tape!

Before participants could set foot on the island, they had to chant a request for permission to land. Another chant was required upon leaving the island. The sun rising over Haleakalā was also greeted with a chant. There were times set aside for prayer and reflection. All meals were communal with everyone helping with cooking and cleaning.

Hikes were of varying lengths and difficulty, and cultural and archaeological sites were pointed out along the trails. No planting is done in August, so the groups' ecological restoration work consisted of filling bags of mulch to be used as erosion dams.
Of course, at the end of the day, after cleansing in the ocean, eating healthy meals, and opening everyone's minds with stimulating lectures, it was time for *kanikapila* with *mele* (music) and *hula.*

The Curriculum

The three-day curriculum included traditional Native Hawaiian healers. Lectures were given by Richard K. Paglinawan, MSW, a master practitioner of *Ho'oponopono*, the traditional Hawaiian practice of conflict resolution, and Roland "Bula" Logan, a practitioner of *Lomilomi* (Hawaiian massage techniques) and *lā'au lapa'au* (Hawaiian herbal healing). Ethnobotanist Dr. Isabella Aiona Abbott, professor emeritus, talked about specific plants, their uses and preparation methods employed by herbal healers. Dr. Kekuni Blaisdell, professor of medicine and mentor to many of the physi-

cians in attendance, discussed the historical and cultural aspects of Kanaka Maoli health. The role of traditional diet in Native Hawaiian health was the topic of Dr. Claire Hughes' lecture. Dr. Keri Ratima, Dr. David Rico and Mr. Ed Oshiro, MPH discussed culturally competent public health practices from a more global perspective. Specifically, they discussed their experiences in health care delivery for the Maori, Native American, as well as certain Asian and African populations. Dr. Nathan Wong talked about how culture affects the physician-patient relationship and the conference ended by sharing the lessons learned and recommendations for future action. At the start of the last session, Dr. Blaisdell reminded all of the physicians present of five key points to remember in the journey toward cultural competency:

1. Our *Kānaka Maoli* patients and their health needs come first. We make this commitment to them by being here.
2. The term "doctor" means teacher. We need also to teach ourselves by listening to, and learning from, our patients, our colleagues and our students.
3. As western-trained *kauka* (doctors), our task is to bring the best of Western Science to the bedside. But we are also *Kanaka Maoli*, so we need to bring effective traditional *Kanaka Maoli* healing ways to our patients as well.
4. We need always to have fun no matter how hard the work. That is, we need to "play hard" as did our ancestors.
5. There must be a reason why we all are here at this special place and at this special time. As we learned at our briefing, Kaho'olawe chose us. We are here because of our ancestors. We have a responsibility from them to heal ourselves, our people, our nation and our descendants forever into the future. We have no other option.

In the review session, the physicians shared with each other what was learned about becoming more culturally competent and what the experience of the weekend meant to them. With regards to cultural competency, the themes that arose included: needing to be aware of one's self and culture first, learning about and supporting the role traditional medicine can play in physician practices, realizing the importance of networking and sharing experiences with each other, working to abolish the cultural stereotypes that exist in medical schools and communities, remembering that the *'āina* (land) can be a powerful teacher, being role models and teachers in their respective communities and families, becoming more involved in community issues and realizing that participating in this conference is only just a small step toward becoming culturally competent.

Summary

Overall, the evaluations of the conference were excellent and the speakers received high scores. Many participants were deeply moved and eager to share what they learned with colleagues and family. The negative comments centered on the large number of topics covered in a short time. Requests that the organizers decrease the number of speakers and increase the amount of time for discussion will be addressed in the planning of what will hopefully be another similar program next year. In summary, based on this experience, pairing a didactic curriculum with three days of immersion—that is, employing Hawaiian cultural values in daily living routines—promotes learning on several levels. Culture is learned, but also felt-physically, emotionally and spiritually. The result is a group of providers who are more culturally attuned to Hawaiian values and hopefully, better able to care for the needs of the *Kānaka Maoli.*

FIVE WAYS TO DIE ON THE GOLF COURSE:

1. Hit by a golf ball.
2. Run over by a golf cart.
3. Whacked by a golf club.
4. Struck by lightning.
5. Forgot your hat.

Surprisingly, one million new cases of skin cancer are detected every year. One person an hour in the U.S. dies from melanoma, the deadliest form of skin cancer. If you spend a lot of time in the sun, you should protect yourself. One out of five Americans develops skin cancer during their lifetime. Don't be one of them. Stay out of the midday sun. Cover up. Wear a hat. Seek shade. And use sunscreen. For more information on how to protect yourself from skin cancer, call 1-888-462-DERM or visit www.aad.org.



AMERICAN ACADEMY OF DERMATOLOGY

The Impact of Disease on Hawai'i's History

Richard Kekuni Blaisdell, MD
Professor of Medicine, University of Hawai'i, John A. Burns School of Medicine, University of Hawai'i at Manoa

The matrix of health, disease and history of the Kanaka Maoli people covers four eras: (1) from time immemorial of Pō to the 1778 return of Lono or chance arrival of the first European explorers; (2) the period of western and eastern contact and colonialism with collapse of the old Kanaka society; (3) the 1893 US armed invasion until the 1983 US Native Hawaiians Study Commission and 1985 E Ola Mau Reports; and (4) current healing of a wounded people through collective Kanaka Maoli cultural revitalization and self-determination.

From Kumulipo (dark source), with the mating of Wākea sky father and Papa earth mother, all in the cosmos were derived in orderly sequence as living, conscious and communicating. After kalo, was born Hāloa, the common ancestor of all Kānaka. Over centuries via canoe, Kānaka settled the dispersed islands of Ka Moananui (Pacific). In Ka Pae'āina, c100 AD, Kānaka embodied 'ohana and aloha 'āina in evolving ahupua'a, the basic geographic, self-sufficient, economic, social and political ecosystem regulated by kānāwai (natural law) to maintain pono.

c1200 AD, Kānaka proliferated over the next 500 years in healthy isolation from contagious epidemic infections elsewhere, attaining a thriving peak population of c400,000-800,000. Main ailments were trauma, degenerative disorders, atopy, focal infections, rare cancer, 'awa excess, mild plant "poisoning," uncommon mental illnesses and congenital defects.

Balanced nutrition, vigorous physical activity, strict sanitation, refined medical practices, cooperative production of food and shelter, cross-generation education and arts were based on timeless spiritual concepts: lōkahi, pono, mana, pālua, kinolau, 'aumākua, piko 'ekolu, hā, mauli, 'uhane, ola, wailua and ea. These promoted holistic wellness and disease prevention. Heiau ho'ōla (healing temples) were centers of research, education and specialty care.

Beginning with Cook's accidental landing in 1778, western and eastern contact initiated five interrelated, inimical and continuing impacts on Kānaka Maoli : (1) indigenous depopulation and foreign immigration; (2) colonial exploitation; (3) cultural conflict; (4) native acquisition of harmful foreign ways; and (5) dominant society neglect and malice.

Initial decimation beginning in 1778-1779 was due to gonorrhea, syphilis, respiratory infections, tuberculosis, alcohol and firearms. Then, 1804 infectious diarrheas, 1824 coughs, 1826 coughs and congestion; 1832 coughs and measles; 1839 mumps, 1840 leprosy, 1848 measles, pertussis, diarrhea and influenza; 1850 coughs; and 1853-1881 four smallpox epidemics. Surviving in 1881 were c45,000 natives, c10,000 Chinese and c3,000 whites.

1859 founding of Queen's Hospital for Kānaka Maoli failed to stem the devastation. There followed in 1870 scarlatina, 1888 pertussis, 1889 measles, dysentery and 1890 diphtheria.

Meanwhile, the onset of Euro-American 1815 cattle ranching, 1820 whaling, 1826 US-forced Sandalwood Treaty, 1835 sugar plantations, 1840 Hawaiian Kingdom constitutional monarchy and 1848-1850 Māhele land privatization alienated more than 70% of Kānaka Maoli from their sacred 'āina (lands).

US missionaries in 1820 began coercive assimilation which exacerbated Kanaka Maoli cultural conflict. Kānaka acquired pernicious, as well as beneficial, foreign lifestyle ways, while colonial economic aggression accentuated Kanaka Maoli despair. When Kānaka Maoli refused sugar plantation work in a 1841 strike, the haole oligarchy initiated 1847 vagrancy laws and importation of Chinese contract laborers in 1852, Japanese in 1868, Koreans in 1903 and Filipinos in 1906.

1875 US-Ka Pae'āina Reciprocity Treaty's largess of rising sugar profits tightened haole economic, political, socio-cultural domination. Kalākaua's reassertions of Kanaka Maoli culture and power were reversed by the haole-imposed 1887 Bayonet Constitution.

In 1893, haole businessmen with the support of US naval troops toppled Lili'uokalani, proclaimed a Provisional Government and, in 1894, a Republic of Hawai'i. US forced annexation of Ka Pae'āina in 1898 and took 1.8 million acres of Kanaka Maoli crown and government lands.

Honolulu cholera epidemic in 1895 and Chinatown bubonic plague in 1899 reflected crowded unsanitary conditions.

By 1900, Kānaka Maoli had declined to a nadir of 37,656, and they were outnumbered by 61,111 Japanese, 25,767 Chinese and 28,819 white foreigners.

Under the new US Territory of Hawai'i , although Kānaka Maoli gained ballot control of the legislature and elected Kanaka Robert Kalani Wilcox as delegate-to-Congress, the US president appointed only haole governors and judges. Asian immigrants initially were denied voting.

In 1909, Governor Walter Frear privatized Queen's Hospital and terminated free medical care for indigent sick and disabled Kānaka Maoli. Haole physicians and businessmen acquired control of Kapi'olani Maternity Home from wāhine (female) Kanaka Maoli of the Ho'ōla Lāhui Society.

1918 influenza, 1928 meningtis, 1936 measles were major fatal acute epidemics with highest rates for Kānaka Maoli, then Asian immigrants and lowest for haole.

1921 US Hawaiian Homes Commission Act set aside 200,000

acres of arid "ceded" (US-stolen) Kanaka Maoli lands for 50% blood-quantum Kanaka Maoli homesteading, to protect haole-leased sugar lands. Over the subsequent 70 years, less than 7,000 Kanaka Maoli families were awarded less than 25% of these lands. More than 20,000 eligible Kānaka Maoli remained on the waiting list, while 70% of the lands were assigned to non-Kānaka Maoli, such as the military.

In the 1930s, heart disease, stroke and cancer began to replace tuberculosis, pneumonia and gastro-intestinal affections as leading causes of death. However, Kānaka Maoli continued to have the highest morbidity, mortality and shortest life expectancy.

1941 Pearl Harbor bombing focused World War II on Ka Pae'āina and the Pacific. Martial law, expanding military bases, and masses of immigrant defense workers from the US continent further Americanized the island economy, politics and culture and marginalized Kānaka Maoli. Post-war economic boom, rise of Asian GI bill-educated island professionals, 1959 statehood, tourism, Korean and Vietnam wars aggravated displacement of less-educated Kānaka Maoli from jobs and from rural kīpuka (enclaves). US civil rights activism inspired modern Kanaka Maoli kū'ē (protest) movement. 1971 Kalama Valley eviction, 1972 ALOHA reparations demands, 1976 Kaho'olawe occupation, 1978 Hōkūle'a voyage, Kanaka Maoli music, hula, language resurgence and creation of OHA as a state agency culminated in 1983 Native Hawaiians Study Commission Report to US Congress. Reagen appointees' Majority Report concluded no US responsibility for the 1893 overthrow of the Hawaiian monarchy. Kanaka Maoli Minority Report strongly disagreed and recommended reparations.

1975 UH medical school graduated first class of 62 MDs, including four Kānaka Maoli.

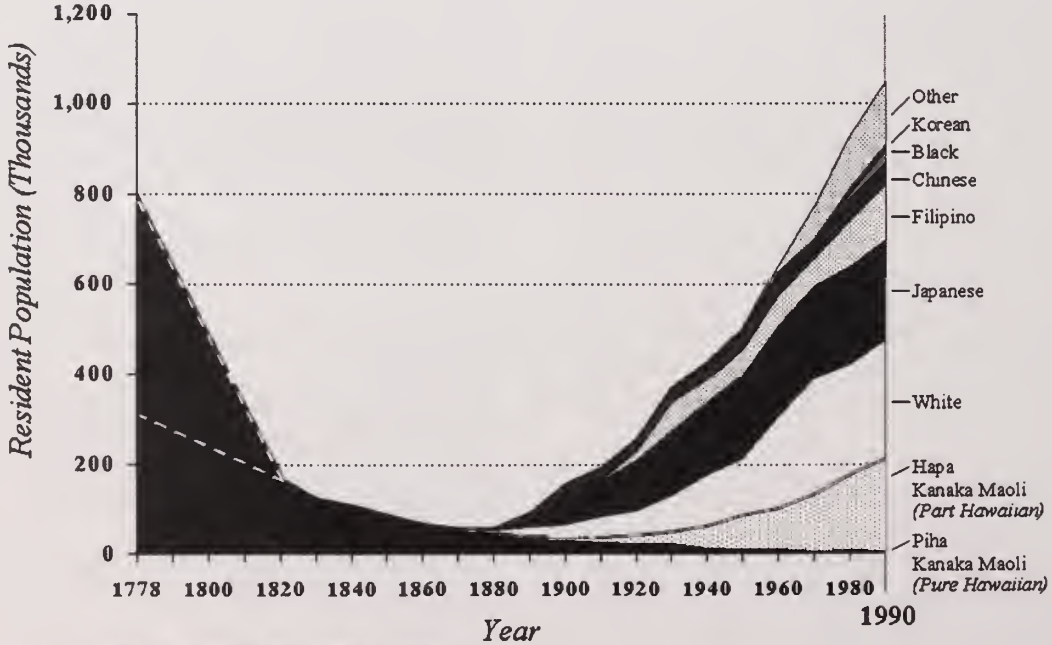
1985 E Ola Mau Health Needs Study Report detailed worst health profile for Kānaka Maoli. Causal historical-societal-environmental, as well as individual lifestyle, factors were cited. Advocated were holistic cultural healing, collective Kanaka Maoli self-responsibility, self-sufficiency, self-determination and return of Kanaka Maoli lands.

1988 US Congress Native Hawaiian Health Care Act authorized Papa Ola Lōkahi and five Native Hawaiian Health Care Centers (Systems). Emphasis was on health promotion, disease prevention and primary care, with involvement of traditional practitioners and cultural health educators. Health Professions Scholarship Program funded western professional training.

1993 US Congress Apology Resolution (PL 103-150) acknowledged: US 1893 armed invasion; US role in overthrow of Kingdom; US violation of treaties and international law; US suppression of Kanaka Maoli inherent sovereignty and right to self-determination; Kanaka Maoli health and well-being tied to their lands; economic and social changes devastating to health and well-being of Kānaka Maoli; Kānaka Maoli never relinquished their claims to their inherent sovereignty or over their national lands to the US; Kānaka Maoli are determined to preserve, develop and transmit to future generations their ancestral territory and their cultural identity with their own spiritual and traditional beliefs, customs, practices, language and social institutions.

In 1999, UH School of Medicine Native Hawaiian Center of Excellence reported a total of 201 Kanaka Maoli MDs; 147, 76% UH graduates; 143, 5% of island 2500 licensed MDs; 59, 28%, in continental US; 60% in primary care, 40% specialists; 50% urban and 50% rural. Thus, UH had significantly increased the number of practicing Kanaka Maoli MDs, and half were in rural areas where there are more Kānaka Maoli in need.

Ka Pae'āina Resident Population by Ethnicity, 1778-1990



Source: E. Nordyke 1989 and Hawai'i State Department of Health 1992

Ho'oponopono

Richard and Lynette Paglinawan
Ho'oponopono (Conflict Resolution) practitioners, Kahalu'u, Hawai'i

Ho'oponopono is a Hawaiian way to resolve interpersonal conflicts among family members. Handed down from generation to generation, it was and continues to be a survival tool.

When the early Hawaiians settled in these islands they brought their values with them which evolved to suit their new life in the new lands. Among these were the beliefs in the importance of family, many persons working together for the common good, maintaining harmony, the importance of higher powers who controlled life and death, the existence of these powers in a myriad of environmental forms, love and respect for extended family to name a few. After the migrations ceased, and the big ocean voyaging canoes ceased to exist, these inhabitants were forced to develop systems that addressed the maintenance of their limited environmental and human resources.

The earliest recordings of Hawai'i and its people indicate the presence of a strict kapu system, resource management tools in planned plant and animal use, conservation periods and interpersonal behavior.

When Cook arrived in these islands, there was an estimated 300,000 people who could not leave these islands and who were forced to develop systems for healing and getting along. Thus, the Kāhuna applied the arts of psychological and emotional healing before beginning any physical healing.

One such system, **ho'oponopono**, is a method with defined procedures and processes that emphasize positive healing within the context of the nuclear and extended family. When used to restore harmony among relatives, the **mana** or the spiritual, psychological, physical, intellectual resources and environmental resources of each person is brought to bear on the situation. It is used to straighten out, to correct, to resolve the conflict or rehabilitate the persons in need. Sometimes there is only a partial ho'oponopono in that there is no resolution but members of the family are made aware of all of the circumstances surrounding the situation and where the key participants stand. Thus this enables others to move on and not feed into the problem matrix.

Ho'oponopono is the opportunity for family members to pool their collective strengths to focus on aiding the one who is hurting and is needy. Members respect each other's needs to be heard while talking in ways that encourage listening rather than turning out others. Therefore, communication is very important. All verbalizations are directed to the leader rather than each other because it is a device for maintaining personal internal controls, especially in family contexts where the communication style is verbally explosive and physical. They are required to engage in self-reflection of acts of commission and omission that contributed to the problem and to understand and be sensitive to the ramifications of these acts on others in physical, psychological, and emotional ways. And finally, to humble oneself through public apology for those deeds. Apology and forgiveness are mutually reciprocal between the injurer and injured parties.

When those ways of conduct are part of their life style, the family and its members are armed with survival tools that will sustain them through all the cycles of family life, its growth and development.

Pāola

Michael Chun

Pāola is a Hawaiian based hands on therapy used to reduce the pain experience. *Pāola* is translated to mean "quick healing''. It was derived from the ancient Hawaiian warring art of *lua* and *lomilomi* massage. This healing art form was passed down through several generations within a family on Hawaii.

The "mana'o'' in pāola is to integrate the two sides of the brain allowing the individual's "mana'' to flow through the pain and allow for immediate relief. The practitioner uses variable hand pressure on trigger points on the body and verbal communications to guide the client's mental processes. Pain relief is immediate and long-term results vary depending on the origin of the pain, mental crisis or anatomical disorder.

Post treatments results include relaxation, reduction of pain, improved range of motion lower anxiety levels and sleep. When Pāola is utilized on patients in intensive care units changes in vital functions are visible on the monitors. (no statistics to validate this)

Pāola therapy is highly influenced by Hawaiian cultural concepts such as, Ho'olono, Lōkahi, Ho'omanawanui, 'Ohana, Hewa, Hā, Hiki nō, Kaona, etc. The practitioner has the understanding of the bipolar nature of being, yin and yang. He has the ability to detach his personal prejudices and beliefs when working: that is working with "no mind".

Pāola includes the Chinese meridian model, shiatsu, left brain right brain operation and meditation techniques.

Kaho'olawe: Traditional Hawaiian Diet (THD) and Health

Claire K. Hughes, DrPH, RD
Director and Nutritionist, Office of Health Parity, Hawai'i State Department of Health
Honolulu, Hawai'i

The Problem: A favorite subject for Hawaiians is "food". However, during the last few decades of the 20th century, our food supply could be characterized as a nutritionist's worst nightmare. There are excesses of all kinds. Across the U.S., we are eating excesses of food, sugar, fat, protein and drinking excesses of alcohol. Resulting from these excesses, are health problems that run the gamut from caries in our teeth and low nutrient reserves, to gross obesity, early aging and early death.

Public health data (BRFSS, *Behavioral Risk Factor Surveillance Study*, CDC) show that Native Hawaiian dental caries, obesity, chronic disease and smoking rates are higher than others in our statewide community. In 1998, more than 53% of Native Hawaiians were overweight, up from about 40% in the 1980s. And, when these risks factors are high, it follows that our rates of illness and death are high. The unfortunate thing is, that when Hawaiians look around and see that more than half of their family and friends are overweight, obesity becomes the community norm. We need to change that perception.

Working within our communities, it is clear that Native Hawaiians do not know that:

- gaining excessive weight is dangerous to the health;
- food fat is an enemy, and that there are ways to determine the fat and sugar content of favorite foods;
- nitrates that preserve canned meats, bacon, sausages are carcinogenic when consumed in large quantities daily;
- omega 3 oils are best, and mono and polyunsaturated oils are next best;
- phytochemicals from vegetables and fruit have an important daily dietary role in fighting cancer, cardiovascular disease, etc., and
- changing our diet is critical to assure the health and survival of our children and families.

What Works: We have found that dietary change for Native Hawaiians is possible, and that the "traditional Hawaiian Diet" programs are an acceptable methodology. Sustaining dietary change is a challenge, but can be done.

Getting the buy-in needed for successful research is possible. Emmett Aluli was the first to use a culturally-appropriate methodology to get Native Hawaiians on Moloka'i to enlist in the 1985 and 1987 research studies, the Moloka'i Heart Study and Moloka'i Diet Study (MDS), after overtures by UH researchers had failed. Emmett went door-to-door, beginning with community kūpuna and leaders, to ask for support. He promised to keep the community informed on the study procedures and progress, and that the communities would hear the study results first. Emmett demonstrated a willingness to be accountable to the community.

The successful MDS, community THDs and recent "Warrior Diet" has taught us important lessons on imparting health and motivation lessons. These are:

- traditional Hawaiian diet (THD), foods, cooking and 10% fat diet yields best results;
- 'ohana building via participants eating daily works;
- kūkākūkā sessions are critical for information exchange/teaching about culture and health;
- teaching about the traditional culture builds pride and confidence, and
- learning the spiritual meaning of the food and diet is viewed as important by the diet participants.

The "Warrior Diet", conducted in May by the Department of Health, has brought new understanding about the efficacy of building and strengthening muscle, increasing flexibility and aerobic capacity, benefits of lomilomi and building spiritual orientation.

As health professionals and elders, it is important for us to "*walk the talk and not just talk the talk*" about leading healthy lifestyles. We need to set the example for our patients and communities.

Office of Cancer Communications
National Cancer Institute
Pap Tests
A healthy habit for life!
Pap tests can help find cervical cancer at an early stage — while it's still easier to cure.
Call the National Cancer Institute's Cancer Information Service at
1-800-4-CANCER (1-800-422-6237).
Visit NCI's website at http://www.nci.nih.gov

Medical School Hotline

Student Profile: Class of 2005 John A. Burns School of Medicine (JABSOM)

Satoru Izutsu PhD
Senior Associate Dean
Chair, Admissions Committee

The School of Medicine's Admissions Committee just completed its final selection of 62 first year students for the 35th entering class. The first day of class was August 1, 2001. To welcome the students, a White Coat Ceremony was conducted in which graduates of the Class of 1980 presented white coats to each student, members of the Hawaii Medical Association gave each student a stethoscope, and the Robert Wood Johnson Foundation donated the book, "On Doctoring" to all students.

There were 1,175 applicants for this freshman class. Of this number, 197 were residents of the State of Hawaii and 978 were out-of-state applicants. Residency status for admission purposes is determined by 5 factors (legal residency, birthplace, parents' residence, high school and college or professional school attended) and the applicant must have a minimum of three of the five to be considered a resident of Hawaii. Candidates for interviews are selected on the basis of academic scores, honor awards during the undergraduate years, extra-curricular activities and employment in human services. Of the total number of applicants, 226 qualified to be interviewed by two interviewers and the Chair of the Admissions Committee. The final selection included 56 in-state and 6 out-of-state applicants.

The Admissions Committee met 21 times between September, 2000, and May, 2001 to rate the applicants. The eleven-member committee consisted of 6 men and 5 women. There were eight clinicians, one basic scientist and two social scientists. The Committee members represented the major ethnic groups in Hawaii as well as varied age levels. The final rating for each applicant was by secret ballot and submitted to the registrar who averaged the scores that were ranked at the conclusion.

Documents examined by the Admissions Committee were: Grade Point Averages (GPA), Medical College Admissions Test (MCAT), interviewers reports, applicant's essays on the topics "Why Medicine?" and "Why (the interest in) the John A. Burns School of Medicine?", letters of recommendations, transcripts of undergraduate courses, and a biographical sketch that included experiences in providing human services. The final median scores of the entering class are: Cumulative GPA, 3.46; Science GPA, 3.55; MCAT total, 30; Verbal Reasoning, 9; Physical Sciences, 10; Writing Sample, P; and, Biological Sciences, 10.

JABSOM is proud that it is the world's most ethnically diverse school. This year's class includes: 15 Japanese, 14 Chinese, 7 Filipino, 7 Other Asians, 6 Hawaiians, 5 Caucasians, 3 Koreans, 2 Vietnamese, 1 Mexican-American/Hispanic, and 1 Other Pacific Islander.

Nineteen are graduates of the University of Hawaii at Manoa; 2 from Hawaii Pacific University; 1 from Chaminade University, Honolulu, and 1 from University of Hawaii— Hilo. Thirty-nine obtained their undergraduate degrees from mainland colleges that include University of California — San Diego, Berkeley and Los Angeles, Irvine, Riverside, Davis, and Santa Barbara; University of Pennsylvania; University of Washington-Seattle; Columbia University, New York; Stanford University; Duke University; Gonzaga University; Massachusetts Institute of Technology; Northwestern University; Princeton University; Seattle University; St. Louis University; University of Denver; University of Idaho; University of Portland; and University of Southern California.

All students have Baccalaureate degrees and 5 have Masters degrees. Their college majors include: 21 in Biology, 2 in each of the following—Anthropology, Biochemistry, Biology-Pharmacology, Pre-Medicine, Psychology, and one (1) in the following fields—Accounting, Biochemistry/Economics, Biochemistry/Neuroscience, Bioengineering, Biology/combined with Dance, Economics, Ethnic Studies, Japanese, Liberal Studies, Genetics, Physiology, Public Health, and, Biomedical Engineering, Biomedical Sciences, Cell & Molecular Biology, Public Health, Ecology & Evolution Biology, English-Landscape Architect, Human Biology, Interdisciplinary Studies, Life Science/Psychology, Mathematics, Neuro Science, Neurobiology-Physiology-Behavior-Neuroscience, Nutrition, Oceanograhy, Physiology, Psychobiology, Science Technology and Socio/Biological Science, and Zoology.

Students were chosen from hundreds of their peers and identified as those with the best potentials of becoming competent, culturally sensitive physicians. They are on an exciting journey that will change their own lives and others forever. They will undoubtedly hear — throughout their journey of becoming physicians — the advice of Dr. Arnold P. Gold, sponsor of the White Coat Ceremony, who said, "... work hard, care, and never forget human suffering."

Until there's a cure, there's the American Diabetes Association.

Until there's a cure, there's the American Diabetes Association.

"Integrative Medicine: An Academic Discipline?" continued from p. 280

creation of the NCCAM. JABSOM believes that it can be a leader in the United States, and internationally in the credible scientific study of alternative and complementary therapies. Furthermore, JABSOM believes that it is important to educate medical students about the therapies that their patients are using which may augment or detract from conventional allopathic medicine. For these reasons, we believe it is important to start a Department of Integrative Medicine at the John A. Burns School of Medicine.

References

1. Riscitelli SC, Burnstein AH, Chaitt D, etal. Indinavir concentrations and St. John's Wort. Lancet 2000; 355:547-8.
2. Ruschitzka F, Meier PJ, Turina M, etal. Acute heart transplant rejection due to St. John's Wort. Lancer 2000; 355:548-9.
3. Eisenberg DM, Davis RB, Ettner S, etal. Trends in alternative medicine use in the United States, 1990-97. JAMA 1997; 280:1569-75.
4. Eisenberg DM, etal. Trends in alternative medicine use in the United States, 1990-97: results of a follow-up national survey. JAMA 1998; 280: 1569-75.
5. Strus SE, complimentary and alternative medicine: challenges and opportunities for American medicine. Acad. Med. 2000; 75: 572-73.
6. Talalay P, Talalay P. The importance of using scientific principles in the development of medicinal agents from plants. Acad. Med. 2001; 76: 238-47.

"Are Heart Transplant Recipients Receiving Cellular Memories from Their Donated Organ? A Heuristic Study," continued from p. 282

References

1. Communication received from psychiatrist Dr. Charles Bruce Greyson, University of Virginia as forwarded to author by Dr. Gary E. Schwartz, Department of Psychology and Medicine, University of Arizona, July 5, 2000.
2. For example, see: Lunde DT. Psychiatric Complications of Heart Transplants, *J of Psychiatry.* 1967;124:1190-1195.
3. See also: Kuhn WF, et al. Psychopathology in Heart Transplant Candidates, *J of Heart Transplants.* 1998;7:223-226.
4. Schwartz GER, Russek LGS. Do All Dynamical Systems Have Memory: Implications of the Systemic Memory Hypothesis for Science and Society In: Pribram KH, Ed. *Brain and Values: Is a Biological Science of Values Possible.* Hilssdale, New Jersey: Lawrence Erlbaum Associates; 1998.
5. Hameroff SR, Penrose R. Orchestrated Reduction of Quantum Coherence in Brain Microtubule: A Model for Consciousness In: Hameroff SR, et al., eds. *Toward a Science of Consciousness.* Cambridge, MA: The MIT Press; 1996.
6. For example see: Pearsall P. *The Heart's Code: Tapping the Wisdom and Power of Our Heart Energy.* New York, NY: Broadway Books; 1998.
7. Pearsall P, Schwartz GER, Russek LGS. Changes in Heart Transplant Recipients the Parallel the Personalities of Their Donors, *J of Integrative Med.* Fall 2000.

"Energy Fields in Conventional and Integrative Medicine," continued from p. 283

5. Fukada E, Yasuda I. On the piezoelectric effects of bone, *J Phys Soc Jpn.* 1957;12:1158-1162.
6. Bassett CAL, Becker RO. Generation of electric potentials by bone in response to mechanical stress, *Science.* 1962;137:1063-1064.
7. Bassett CAL, Pawlik RJ, Pilla AA. Augmentation of bone repair by inductively coupled electromagnetic fields, *Science.* 1974;184:575-577.
8. Sutcliffe ML, Goldberg AAJ. The treatment of congenital pseudoarthosis of the tibia with electromagnetic fields. A survey of 52 cases, *Clin Orthop.* 1982;166:45-57.
9. Tabrah F, Hoffmeier M, Gilbert F, Batkins, Bassett CAL. Bone density changes in osteoporosis-prone women exposed to pulsed electromagnetic fields (PEMFs), *J Bone Min Res.* 1990;5:437-442.
10. Martin RB, Gutman W. The effect of electric fields on osteoporosis of disuse, *Calcif Tissue Res.* 1978;Feb 28:25(1):23-27.
11. Rambaut PC, Goode AW. Skeletal changes during space flight, *Lancet.* 1985;2:1050-1052.
12. Grunhous L, Dannon PN, et al. Repetitive transcranial magnetic stimulation is as effective as electroconvulsive therapy in the treatment of nondelusional depressive disorder: an open study, *Biol Psychiatry.* 2000;Feb 15 47(4): 314-24.
13. Galloway NT, El-Galley RE, et al. Extracorporeal magnetic innervation treatment for stress urinary incontinence, *Urol.* 1999;Jun, 53(6):1108-11.
14. Rosa L, Rosa E, Sarner L, Barrett S. A close look at therapeutic touch, *JAMA.* 1998;Apr 1;279(13):1005-10.
15. Adair RK. Constraints on biologic effects of weak extremely low frequency electromagnetic fields, *Phys Rev.* 1991;A 43:1039-40.

"The Use of Pulsed Electromagnetic Fields (PEMF) in Osteoarthritis (OA) of the Knee Preliminary Report," continued from p. 288

perceived effect. Another withdrawal was for travel. Ten patients completed the study.

Results obtained for the monitored parameters are summarized in Table 1. Thirty days of active magnet use improved pain, perception of function, and the range of motion of the joint, while reducing the duration of morning stiffness in the knee, and increasing the range of motion. No effect was noted on joint swelling, circumference, or time needed to walk 50 feet.

Cartilage, like bone, has piezoelectric properties leading to electrical outputs thought to be capable of stimulating chondrocyte synthesis of matrix components.[5] Similar electrical changes may occur through Faraday induction from applied time-varying electromagnetic fields. Complex chemical responses are detectable within 48 hours of PEMF exposure.[6-8]

Although pain, morning stiffness, and range of motion appear to be beneficially affected by the active field used in this study, further sampling with appropriate statistical evaluation is necessary for valid quantitative conclusions. Extended studies should be designed to histologically determine whether PEMF exposure has true chondroprotective or repair potential in the intact joint, or both.

References

1. Camara K, Danao-Camara T. Awareness of, use and perception of efficacy of alternative therapies by patients with inflammatory arthropathies, *Hawaii Medical Journal.* 1999;18(12):329-332.
2. Trock DH, Bollet AJ, et al. A double–blind trial of the clinical effects of pulsed electromagnetic fields in osteoarthritis, *J Rheumatol.*1993;20(3)456-460.
3. Trock DH, Bollet AJ, Markoll R. The effect of pulsed electromagnetic fields in the treatment of osteoarthritis of the knee and cervical spine, *J Rheumatol.* 1994;21(10):1903-1911.
4. Altman RD. Classification of diseases: osteoarthritis, *Semin Arthritis Rheum.* 1991;Suppl. 2(20):40-47.
5. Parkkinen JJ, Mikko JL, Holminen HJ, Tammi M. Local stimulation of proteoglycan synthesis in articular cartilage explants by dynamic compression in vitro, *J Orthop Res.* 1982;10:610-620.
6. Adey WR. Tissue interactions with non-ionizing electromagnetic fields, *Physiol Rev.* 1981;61(2):435-514.
7. Goodman R, Wei L, Henderson J. Exposure of human cells to low frequency electromagnetic fields results in quantitative changes in transcripts, *Biochim Biophys Acta.* 1989;1009:216-220.
8. Hiraki Y, Endo N, Takigawa M, et al. Enhanced responsiveness to parathyroid hormone and induction of functional differentiation of cultured rabbit costal chondrocytes by a pulsed electromagnetic field, *Biochim Biophys Acta.* 1987;931(1):94-100.

WE COLLECT PAST DUE ACCOUNTS

Only 25%* fee for Health Care Firms!

Why give up more!

Wood & Tait

HI Collection & Detective Agency
Staff on Kauai, Oahu, Maui, & Hawaii
http://www.woodtait.com

739-0433

jwood@woodtait.com

*Applies to accounts assigned during this promotion; no restrictions as to dollar size or age of accounts. Fee will increase to 50% if litigation or forwarding required; you will receive a contract.

Your New Best Friend...

The FREE Consumer Action Website – it's got thousands of links to companies. And government agencies – the names, numbers, advice, and connections you need to get your wrongs righted.

Log on to **www.pueblo.gsa.gov**, and click on the FREE Consumer Action Website.

www.pueblo.gsa.gov

A PUBLIC SERVICE OF THE U.S. GENERAL SERVICES ADMINISTRATION

Classified Notices

To place a classified notice:

HMA members.–Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.

Nonmembers.–Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Gastroenterologist

GASTROENTEROLOGIST— Oahu Excellent private practice opportunity for a BE/BC gastroenterologist. Busy, well-established gastroenterologist seeking a well-trained, hard-working, personable peer to share office or buy into partnership. Send CV to Darrell Lee, MD, Kapi'olani Medical Center at Pali Momi, Suite 140, Aiea, HI 96701.

Assistant Researcher

ASSISTANT/ASSOCIATE/FULL PROFESSOR OF MEDICINE, M3/M4/M5, one position, Position No. **0082790T**, Dean's Office/Geriatric Medicine Program, UH John A. Burns School of Medicine, part-time or full-time, 11 month, non-tenurable, temp general funds, NTE 06/30/02, renewable depending on performance and/or funding, to begin approximately December 2001, pending position clearance and availability of funds. The John A. Burns School of Medicine at the University of Hawaii seeks a board certified or board eligible internist or family practitioner to serve as a physician at the Hawaii State Hospital in Kaneohe, Hawaii. The successful applicant will be a physician who by academic standing and appropriate experience is qualified for an appointment to the medical school faculty at the Assistant/Associate/ Professor level. **Duties**: Work under the direct supervision of the Director of Medical Services and provides direct clinical services for inpatients of the Hawaii State Hospital and is the primary back-up physician to cover for absences of other medical services physicians because of vacation, sick leave or other approved absences. Will also serve as a member of appropriate hospital committees. Will be on the regular faculty of the medical school and will be expected to undertake teaching and scholarly activities commensurate with the academic rank. **Minimum Qualifications: (Assist)** MD or DO degree; Board Certified (or Eligible) by the American Board of Internal Medicine or American Board of Family Practice, eligible for Hawaii license and demonstrated ability in teaching: **(Assoc)** Same as Assistant plus four years at the rank of Assistant Professor or equivalent combination of teaching and experience; ABIM or ABFP boards in a subspecialty as appropriate; and proven ability in teaching, research and programs administration; **(Prof)** Same as Associate plus four years at the rank of Associate Professor or any equivalent combination of teaching and experience. **Desirable Qualifications:** Interest and experience in working with psychiatric patients; familiarity with local Hawaii culture; ability to work as a member of an interdisciplinary team; interest and experience in medical school teaching as a clinical or regular faculty member. **Minimum Annual Salary (at full time):** (Assist): $78,924; (Assoc).$92,340; (Prof): $99,876. Salary commensurate with experience. **To apply:** Send updated CV, bibliography, letter of application, and five names of reference to Patricia Lanoie Blanchette, M.D., MPH, UH John A. Burns School of Medicine, 347 No. Kuakini St., HPM-9, Honolulu, HI 96817 (808-523-8461; FAX 808-528-1897) pblanch944@aol.com. **Closing Date**: 11/20/01, however continuous recruitment until filled. Applications postmarked by 11/20/01 will receive first consideration. An EEO/AA Institution.



There is a time in life when we start to understand ***what really matters.***

Helping people with terminal illness, their families and loved ones live every day at home.

924-9255

www.hospicehawaii.org

HOSPICE HAWAII

The Weathervane Russell T. Stodd MD

In Life And Medicine, It's What You Haven't Done That Matters.
A 72 year old man fell off a curb while heading toward his car and fractured his hip after leaving the ophthalmologist's office. In a subsequent law suit, the attorney for the patient cited the *Physicians Desk Reference*, and claimed that the doctor failed to meet the standard of care by not providing dark glasses, and that caused the patient's injury. The PDR advises doctors who prescribe dilating drops to instruct patients to wear dark glasses, and avoid driving or operating dangerous machinery after the eyes are dilated. The doctor stated that his staff routinely advises patients about light sensitivity and blurred vision along with dilating drops, and offers the patient dark glasses before leaving the office. However, the patient did not request them, and no documentation was made in the record that the dark glasses were offered. Considering the above, the defense group felt it would be difficult to defend, the case was settled, and the doctor went into the data bank where they make deposits but not withdrawals.

Elsie! Please Use The Container. It Was The Herd Shot Round The World.
An exciting development to aid in the diagnosis of "mad cow disease" has been claimed by Israeli scientists. A urine test will detect the renegade proteins, called *prions*, which are believed to cause the disease. Scientists claim the test is straightforward, and can be quickly confirmed. At the present time the only method of diagnosis is at autopsy where the spongiform encephalopathy is evident. In Britain, about 100 people have died from the human variant, Creutzfeldt-Jakob Disease. Researchers have been desperate to find a simple diagnostic test in order to save cattle herds when an infected animal is discovered. Investigators have been able to detect the condition with 95% accuracy in a double blind test performed on 52 British cows. It has not been proven that the condition can be transmitted with blood, but restrictions have been imposed. The test could help safeguard the blood supply also, much of which is exported from Europe to the U. S.

Money May Be The Root Of All Evil, But The Stem Is Okay.
Although doctors have used stem cells to grow skin for grafting burn patients and new cartilage to repair damaged knees, now a technique has been found to replace complex corneal tissue in the human eye. Researchers have taken undamaged limbal stem cells and grown them on amniotic membrane medium for several weeks, and then transplanted them on corneas scarred from Stevens-Johnson syndrome, lye burns, or pemphigus, Success rate has been from 70 to 80% with vision restored to 20/40 in some cases in initial studies done at Univ. California at Davis. At six months follow up, there were no cases of recurring inflammation.

If Heaven Went By Merit, Man Would Stay Out, And His Dog Would Go In.
In 1965, when the Medicare law went into action, Christian Science healing centers were part of the legislative act. In 1996 a group critical of faith healing, Children's Healthcare Is A Legal Duty (CHILD), brought a lawsuit challenging the statute as a breech of separation of church and state. The journal *Pediatrics* found 172 deaths of children deprived of medical care where 140 of those had at least a 90% chance of survival with proper medical or surgical care. The AMA filed friend-of-the-court briefs in support of the suit. Congress responded with a new definition - RNHCI - "religious non-medical health care institutions" which fits the 20 Christian Science centers like pantyhose. An appeal court's majority found the new definition a "permissible accommodation of religion." The Supreme Court, without comment, simply let the lower court ruling stand, and therefore, federal spending on faith healing will continue. The potential for sharp differences in interpretation were clearly stated by the dissenting opinion, "The basic deficiency of the majority opinion is that it upholds the constitutionality of a statute which provides a government benefit solely to religious institutions. I am aware of no other decision in the United States which has upheld such a program."

Bend Over And Spread Your —
Colon cancer is the second-deadliest malignancy and will claim 56,200 lives this year. The old standard mechanism of occult blood and sigmoidoscopy is now believed to fail 24% of the time in detecting colon cancer. A recent study in the New England Journal of Medicine claimed that occult blood test alone is effective between 1/3 and 1/2 of the time, while sigmoidoscopy alone is effective 70% of the time. The NEJM government funded study analyzed data from 2885 patients aged 50 to 75 at hospitals across the country. Insurers generally encourage doctors to annually screen those over 50 by one of the two cheaper methods. Editorializing, the NEJM states that doctors should recommend colonoscopy as the standard. It is more expensive, but significantly more useful in detecting serious disease.

GOT NO INCOME? We Don't Care! GOT NO COLLATERAL? We Don't Care! CAN'T PAY US? Now We Care!
As published in the *Pacific Business News*, it is old news that Hawaii Medical Services Association agreed to guarantee a loan of $5 million to a Hawaii medical group. Unable to obtain the loan without serious difficulties, the group prevailed on HMSA, and that generous "mutual" decided to offer support. When the attorney general, Mr. Anzai, was asked about the legality of "mutual" reserves being pledged in this matter, he declined to reply, and punted the question to our insurance commissioner. When Mr. Metcalf was asked if any such arrangement affecting the balance of medical competition in the community would be worthy of investigation, Mr. Metcalf stated it definitely would. However, when obliged to respond in writing, Mr. Metcalf said he has no jurisdiction over the "mutual" and any action from his office would have to come through legislative fiat. Does doubt remain in anyone's mind that our all-dominant "mutual" is in complete control?

Most People Are Not Particularly Good At Anything.
In Philadelphia, a motorist was cited for driving under the influence when he ran into a bicyclist. The arresting officer stated that the driver smelled of alcohol, slurred his speech and had glassy eyes. At trial, the attorney for the accused stated that he wanted to explain the "glassy" eyes appearance by removing the defendant's prosthetic eye. The judge looked into the orbit and stated that the attorney missed the point in that both eyes were described as "glassy." He sentenced the driver to 90 days for DUI and reckless endangerment. The driver could have replied, "I'll keep an eye out for you."

Trespassers In The Repair Shop Will Be Ultra-Violated.
A husband and wife worked for the Indiana Department of Transportation in the maintenance department. They had the same foreman, who claimed to be bisexual. He harassed both of them with inappropriate touching, groping, caressing, urging sexual favors and suggestive speech. They sued the state of Indiana under Title VII of the Civil Rights Act which bans discrimination on the basis of sex. The supreme court ruled that because the accused foreman was bisexual and treated both sexes the same, even though the behavior was inappropriate and naughty, that there could be no discrimination under title VII. The state was not liable for any damages.

Hey, Lady, Your Freudian Slip Is Showing!
Betsy Gotbaum, past President of the New York Historical Society had the honor of introducing the illustrious speaker at the Society's fund raiser. She introduced former President William Jefferson Clinton as ———— Richard Nixon!

ADDENDA
- ❖ 30,000 Americans die each year from firearms; 1/2 of them are suicides.
- ❖ I wish the buck stopped here, because I am really short right now.
- ❖ I was lost in thought - it was unfamiliar territory.

Aloha and keep the faith —rts■

Contents of this column do not necessarily reflect the opinion or position of the Hawaii Ophthalmological Society and the Hawaii Medical Asociation. Editorial comment is strictly that of the writer.

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



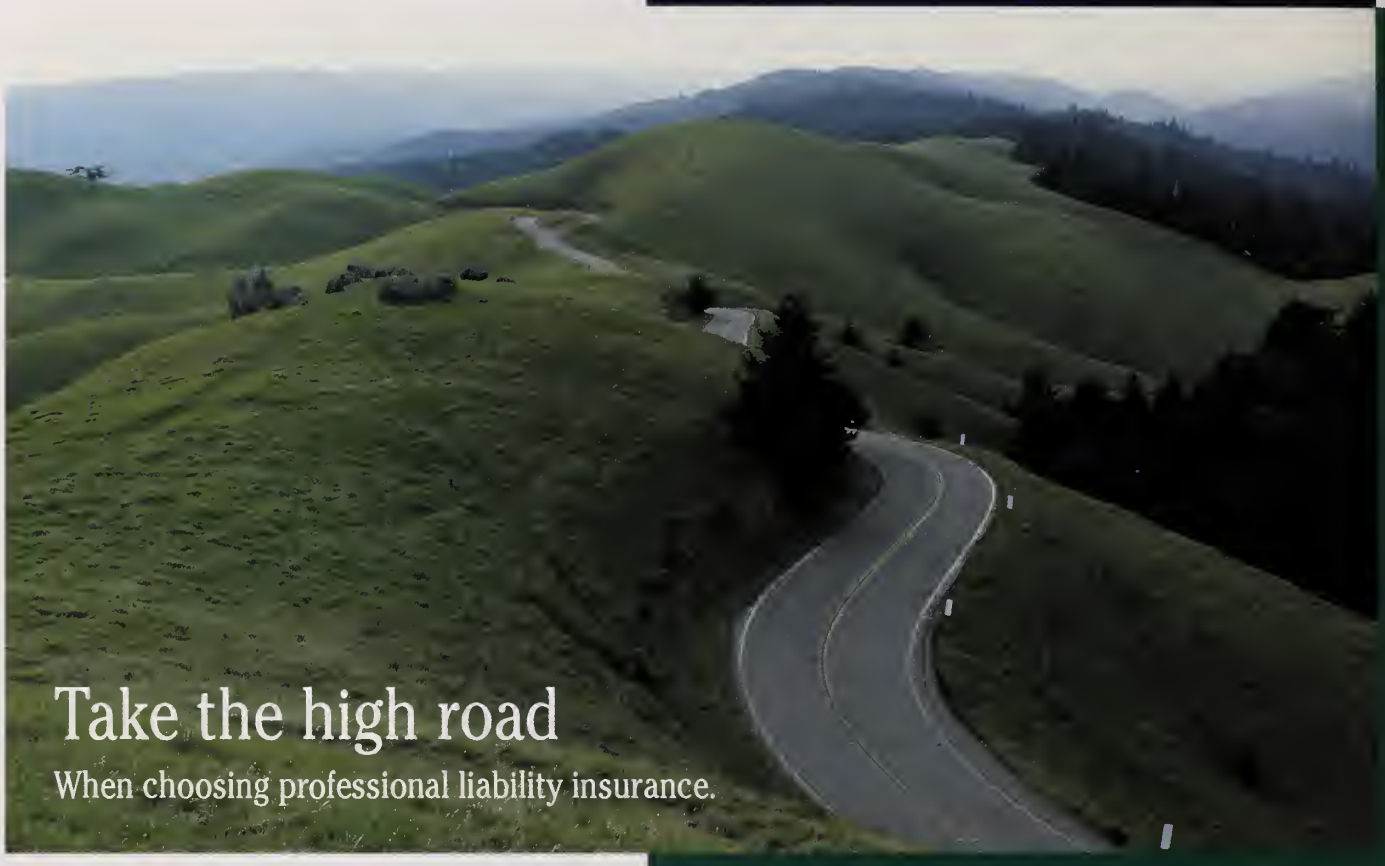
- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA



NO RATE INCREASE IN 2001

MIEC

Medical Insurance Exchange of California

6250 Claremont Avenue
Oakland, California 94618
800-227-4527
www.miec.com

HAWAII CLAIMS OFFICE:
1360 South Beretania Street,
Honolulu, Hawaii 96814

Rated "A" (Excellent) by A.M. Best

Sponsored by the Hawaii Medical Association

THE SAFEST ROUTE IS
WITH AN EXPERIENCED GUIDE.

In Hawaii, that's MIEC. We are the West's first physician-owned, not-for-profit professional liability insurer. For more than a quarter century, we've protected doctors with financially secure coverage. We're also known for our unsurpassed, record of returning ts to policyholders, sults permit. We've d over $200 million.

bility insurance is a long-term business relationship. At MIEC, we take this commitment seriously.

Choose the genuine original, MIEC.

L-SIZE
R15
H25x
SCI

HAWAII MEDICAL JOURNAL

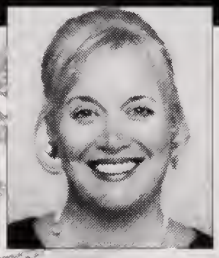
December 2001 Volume 60, No. 12 ISSN: 0017-8594



**********MIXED ADC 967
Serials Dept
Sciences Library
Box I
Brown University 02912-0001
Providence, RI

Straub welcomes these outstanding new physicians

NEUROLOGY



Dr. Lynn Stuart Ashby is Board Certified in Neurology and Palliative Medicine. Special interests include neuro-oncology and general neurological care. Received Doctorate of Medicine at Northwestern University Medical School, Chicago, IL. Neurology residency at St. Joseph's Hospital and Medical Center, Phoenix, AZ. Fellowship in neuro-oncology at The Barrow Neurological Institute, Phoenix, AZ. She is also the Neuro-oncology Consultant for the Gamma Knife Center of the Pacific.

ORTHOPEDIC SURGERY



Dr. Michael Reyes' special interests include joint replacement surgery, arthroscopy/sports medicine, trauma and general orthopedics. Received Doctorate of Medicine from University of Pennsylvania School of Medicine. Residency at University of Southern California Department of Orthopedic Surgery. Fellowship in Adult Reconstruction/Joint Replacement Surgery at the University of Southern California Department of Orthopedic Surgery.

RADIOLOGY



Dr. Kryss Kojima is Board Certified in Diagnostic Radiology. Special interests include body imaging, magnetic resonance angiography, magnetic resonance coil design and computers. Received Doctorate of Medicine from Oregon Health Sciences University, School of Medicine. Diagnostic Radiology Residency at Oregon Health Sciences University. Fellowship in body imaging at Stanford University.

Straub

Partners in health

straubhealth.com

24-Hour Appointment Line: 522-4777

HAWAII MEDICAL JOURNAL
(USPS 237-640)

Published monthly by the
Hawaii Medical Association
Incorporated in 1856 under the Monarchy
1360 South Beretania, Suite 200
Honolulu, Hawaii 96814-1520
Phone (808) 536-7702; Fax (808) 528-2376

Editors
Editor: Norman Goldstein MD
News Editor: Henry N. Yokoyama MD
Contributing Editor: Russell T. Stodd MD

Editorial Board
John Breinich MLS, Satoru Izutsu PhD,
James Lumeng MD, Douglas G. Massey MD,
Myron E. Shirasu MD, Frank L. Tabrah MD,
Alfred D. Morris MD

Journal Staff
Editorial Assistant: Drake Chinen

Officers
President: Gerald McKenna MD
President-Elect: Calvin Wong MD
Secretary: Ali Bairos MD
Treasurer: Paul DeMare MD
Past President: Philip Hellreich MD

County Presidents
Hawaii: David Camacho MD
Honolulu: William McKenzie MD
Maui: Michael Savona MD
West Hawaii: Ali Bairos MD
Kauai: Gardner Quarton MD

Advertising Representative
Roth Communications
2040 Alewa Drive
Honolulu, Hawaii 96817
Phone (808) 595-4124
Fax (808) 595-5087

The *Journal* cannot be held responsible for opinions expressed in papers, discussion, communications or advertisements. The advertising policy of the *Hawaii Medical Journal* is governed by the rules of the Council on Drugs of the American Medical Association. The right is reserved to reject material submitted for editorial or advertising columns. The *Hawaii Medical Journal* (USPS 237640) is published monthly by the Hawaii Medical Association (ISSN 0017-8594), 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814.

Postmaster: Send address changes to the *Hawaii Medical Journal*, 1360 South Beretania Street, Second Floor, Honolulu, Hawaii 96814. Periodical postage paid at Honolulu, Hawaii.

Nonmember subscriptions are $25. Copyright 2001 by the Hawaii Medical Association. Printed in the U.S.

Contents

Editorial
Norman Goldstein MD 308

Notes from the HMA 145th Annual Meeting
Russell T. Stodd MD 308

Letters to the Editor 311

Organ Procurement 1999-2000: How is Hawaii Doing?
Kevin H. Higashigawa BS, Chris Carroll RN, and Linda L. Wong MD 314

A Systematic Approach to Provider Based Disability Management
Paul J. Smith MD and Ivan Preis MD, MS 318

Residents' Case Series
Julie Won Ireland MD and Byron Aoki MD 321

Medical School Hotline
Michael H. Nogoshi MD, FACP 323

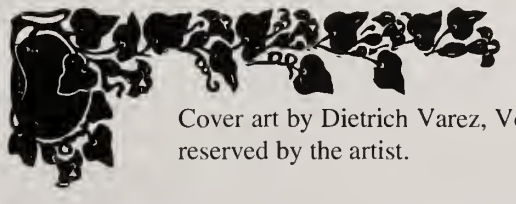
Cancer Research Center Hotline
Loïc Le Marchand MD, PhD 325

News and Notes
Henry N. Yokoyama MD 327

Index to Hawaii Medical Journal, Volume 60, 2001 329

Classified Notices 337

Weathervane
Russell T. Stodd MD 338



Cover art by Dietrich Varez, Volcano, Hawaii. All rights reserved by the artist.

Ulu from Kanehunamoku

The breadfruit plant is said to have been found on a mysterious floating island by two fishermen. They brought it back for us.

Editorial

Norman Goldstein MD
Editor, Hawaii Medical Journal

Bioterrorism, The Course We Never Had in Medical School

Everything changed on September 11, 2001. Our world will never be the same. Did terrorists select this date to mimic our emergency call system? Through the increasing number of news stories, alerts, faxes, e-mails, medical meetings and urgent announcements from medical societies we are all aware of the bioterrorism threats, pranks and successful attacks. As physicians, we must be completely current regarding the implications and effects that bioterrorism has on our patient population.

At the recent Hawaii Medical Association Annual Meeting on Kauai, Richard F. Corlin MD, President of the American Medical Association, noted that a medical textbook on bioterrorism sold out and is no longer available. There is however an excellent electronic textbook on Biological Warfare and its Cutaneous Manifestations by Thomas W. McGovern, MD MAJ MC and George W. Christopher LTC USAF MC, readily available on the Web at: http://telemedicine.org/BioWar/biologic.htm.

Anthrax may top the list of biological warfare agents presently, but there are many others including:

Viral agents: small pox, hemorrhagic fever, equine encephalitis

Bacterial agents: plague, glanders, tularemia, brucellosis, Q-fever

Toxins: botulinum, ricin, staphylococci enterotoxin

Physicians realize how vulnerable America and the rest of the world is to bioterrorism. Evidence of this is clearly demonstrated by the number of criminal investigations in the United States related to the use of biological agents as weapons of mass destruction, which more than doubled between 1997 and 1998. In 1997, 30% of terrorism investigations involved biologicals. In 1998, 62% related to these materials.[1] Up to date data are not yet available but since September 11 bioterrorism has dramatically increased.

President George W. Bush is to be congratulated for creating the Office of Homeland Security. World leaders are making positive progress though we are not yet fully prepared. The U.S. Government Accounting Office (GAO) reported in September 2001 that "the coordination of federal terrorism and research, preparedness, and responsible programs thus far has been fragmented."[2]

This is an unprecedented war, but thanks to City, County, State and Federal efforts, with the cooperation of hospitals and physicians, each day we become better educated to combat biological enemies.

References

1. U.S. General Accounting Office, *the Department of Health combating terrorism: need for comprehensive threats and risk assessment of chemical and biological attacks*, GAO/NSAID-99-163, Sept. 1999, p. 18
2. U.S. General Accounting Office, *Bioterroism: Federal Research and Preparedness Activities*, GAO-01-915, Sept. 2001, pp. 15-16

Notes From the HMA 145th Annual Meeting

Russell T. Stodd MD

The 145th annual meeting of the Hawaii Medical Association was held at the Hyatt Regency Hotel at Poipu, Kauai, Hawaii. Along with the House of Delegates meeting, attendees had the benefit of a large display of exhibits from a multitude of medical companies and agencies which serve Hawaii's physicians. Of greatest importance to the physicians and many visitors was the excellent education program which provided 9.5 hours of category one credit, and provided some extremely useful information for every medical practice.

The first morning was dedicated to *Gettin' Old Ain't Easy*. Patricia Blanchette, MD, MPH, Professor and Director of the Geriatric Medicine Program for John A. Burns School of Medicine (JABSOM) University of Hawaii, gave a comprehensive overview of Alzheimer's Disease with a careful description of early signs, and progress of the disease. The numerical, social, and financial impact on our society was described as our baby boomer population moves into Medicare years. Included also was a detailed explanation of the amyloid cerebral degenerative changes and the avenues of research for drugs to arrest the degeneration. Also, the effect on caregivers was discussed, and the importance of providing assistance to those obliged to care for an increasingly difficult loved one.

Melvin H.C. Yee, MD, neurologist and Assistant Professor of Medicine at JABSOM, followed by discussing Parkinson's Disease. 80% of the brain's substantia nigra is lost before symptoms of Parkinson's occurs. Dr. Yee emphasized that tremor is not a hallmark, but rather the cogwheel rigidity, abnormal posture and gait, and bradykinesia, reveal the diagnosis. Tremor may or may not be present. Signs of early PD were presented along with a differential diagnosis, including multi-infarct state, hydrocephalus, HIV, basal ganglia tumor, depression, and drug induced parkinsonism. An overview of treatment with various neuroprotective agents and surgical approaches outlined the avenues available for therapy. Transplantation of embryonic tissue shows great promise, but remains an issue of controversy.

Iqbal Ahmed MD, Professor and Vice Chair for Education, Department of Psychiatry JABSOM, talked about Depression in the Elderly. Factors such as poor health, disability, cognitive impairment, psychic pain and drug dependence contribute mightily to late-life depression. The most compelling consequence of depression is increased mortality from both suicide and medical problems. White males are at greatest risk with suicide rising severely after age 65. Most authors believe that there is a relationship between depression and non-suicidal mortality also. Diagnosis is critical because untreated depression is likely to persist in the elderly. The patient and family must be educated about therapy, and pharmacologic agents should start at low doses and gradually increased as necessary. Moreover, maintenance therapy is a requisite because cessation of medicine often promotes relapse. Treatment for at least six months is necessary after remission of the depression, and often a chronic condition requires ongoing drugs.

Continues on p. 310

SOLUTIONS THAT SAVE

TIME & MONEY



Digital imaging of your documents is the advanced technology that will save your practice time and money.

- Indexing of documents provide digital search and retrieval capabilities
- Immediate access to patient files
- Quick and easy file sharing with other physicians
- Affordable and cost effective
- Rapid turnaround

Call us today at (808) 440-8508 or visit us at www.synterasolutions.com

SYNTERA
Solutions

BUILDERS OF NEXT GENERATION IMAGING SOLUTIONS & STORAGE AREA NETWORKS

Schering/Key Pharmaceutical

Claritin-D 12 Hour
(5 mg loratadine/120 mg pseudoephedrine sulfate, USP)
Extended Release Tablets

Claritin-D 24 Hour
(10 mg loratadine/240 mg pseudoephedrine sulfate, USP)
Extended Release Tablets

Claritin RediTabs
10 mg (loratadine rapidly-disintegrating tablets)

Claritin Syrup
(loratadine) 10 mg per 10 mL

Once-a-day nasonex (mometasone furoate monohydrate) Nasal Spray, 50 mcg

Claritin 10 mg TABLETS (loratadine)

Tequin gatifloxacin

Velvet Agena-Chee
Senior Sales Representative
Voice Mail (800) 782-2347
Box 3858

Donn keoki Arizumi
Pharmaceutical Representative
Voice Mail (800) 544-5420
Box 8058

Shawn Brady
Sales Representative
Telephone (808) 387-1409
Voice Mail (800) 554-5420
Box 1342
FAX (808) 373-1772
E-Mail shawn.brady@spcorp.com

Mark Buquoi
Sales Representative
Telephone (808) 384-3862
Voice Mail (800) 544-5420
Box 9795
FAX (808) 841-6105

Dennis M. Hamamura
Senior Pharmaceutical Rep.
Telephone (808) 671-0225
Voice Mail (800) 544-5420
Box 8774
FAX (808) 671-0817

Carol K. Honda
Sales Representative
Voice Mail (800) 554-5420
Box 8322
FAX (808) 593-1776

Rachelle Hyde
Sales Representative
District Trainer
Voice Mail (800) 782-2347
Box 3861

Caroline Perry
Sales Representative
Voice Mail (800) 554-5420
Box 1274
E-Mail Caroline.perry@spcorp.com

Brian Souza
District Account Representative
Telephone (808) 394-9475
Voice Mail (800) 554-5420
Box 6811
FAX (808) 394-9475
E-Mail brian.souza@spcorp.com

Later in the morning session, Greg Kokame, MD, assistant professor JABSOM and skilled retinal surgeon, presented a lucid discussion of macular degeneration. This disorder affects about 3.5 million Americans and is the major challenge for ophthalmology in the 21st century. The incidence increases with age and by age 85 will impair as many as 19% of the population. Dr. Kokame noted that the condition comes about in two basic forms, wet and dry. To date, the dry type appears amenable only to consistent diet of supplemental vitamins and zinc, while the wet AMD can be influenced by laser photodynamic and retinal translocation therapy. Avoidance of smoking and exposure to ultra-violet light are factors in protecting sensitive retinas.

James Yates, MD, adjunct professor - Geriatrics JABSOM, provided a valuable discussion of hearing and balance loss of aging patients. About 27 million adults have some degree of hearing loss. Types of hearing aids and listening devices were noted. Tinnitus and balance problems were presented, noting that diet, medication and physical therapy can be helpful in caring for imbalance.

Bret W. Lynn, MD, MPH, assistant professor of Medicine, JABSOM, gave a detailed account of the aging population, noting rapid growth and great increase in caring for chronic illness. Problems of dementia, medication use, hearing and visual disorders, incontinence, and caregivers' fatigue are just some of the difficulties to be confronted. In the over 65 population, 85% have one or more chronic medical problems. He discussed strategies for educating patients, gaining compliance, avoiding drug reactions and accidents, maintaining health and good nutrition. Cancer screening for breast, prostate, colo-rectal, and cervical neoplasm becomes of increasing importance with aging.

The second morning the program centered around innovations in surgery. Susan Steinemann, MD, assistant professor of surgery, JABSOM, discussed educating students in small tutorials. Considerable learning comes through computer assisted techniques with much self direction, 24 hour access to computers, flexible use of time, and artificial intelligence. Residents use simulators with virtual reality to learn minimal invasive methods for endoscopy and surgical procedures. There is less direct patient contact and bedside skills may be lacking.

Eric Oshiro, MD, neurosurgeon, delivered a fascinating program on minimally invasive neurosurgery. Development in the last decade of stereotactic radiosurgery, interventional neuroradiology and endoscopic neurosurgery have revolutionized the problem of anatomic access. Treatment of tumors, vascular malformations, and emboli has become a much more promising reality, as the bony limitations and intolerant tissue now yield to the gamma knife, stereotactic devices and endovascular intervention.

Fascinating changes in refractive eye surgery were presented by John D. Olkowski, MD, assistant clinical professor, JABSOM. Traveling through radial karatotomy and on to lasik surgery, he showed how the procedures reduce nearsightedness, and give patients sharp sight without an optical appliance. His program was spiced up by a lively Q&A session following.

Alfred Liu, MD, associate professor, JABSOM, otolaryngologist, showed image guided sinus surgery (IGSS) has far advanced surgery of the sinus cavities. With stereotaxis, video guided instrumentation, and microprobes, the sinuses can be visualized with precision. Debridement can be managed with much less chance of injury to sensitive surrounding tissue.

Cardiovascular and thoracic surgery are now approached with minimal invasion. Mark T. Grattan, MD, clinical associate professor at JABSOM, had excellent illustrations of off-pump coronary bypass surgery, thoracotomy for lung biopsy, and laser transmyocardial revascularization. Advantages are better cosmetic results, less pain, shortened length of hospital stay, better outcomes and cost reduction. This presentation tied in very nicely with vascular surgeon Dean Sato, MD, who showed how abdominal aneurysms can be approached through the femoral artery. Remarkable synthetic implants can be maneuvered into the dangerous dilated vascular area, expanded and secured with stints. Elective repair allows a mortality of 3 to 4% compared with 60% when performed as an emergency.

William Yarborough, MD, associate clinical professor, JABSOM, presented material on minimally invasive urologic surgery. He pointed out that urologists pioneered minimal surgical invasion at least 30+ years ago. Minimal surgical approaches have been applied to almost all facets of urology. Percutaneous stone removal, shockwave lithotripsy, and laparoscopic surgery for abdominal testes, adrenalectomy, brachytherapy for prostate cancer, urinary incontinence, and even nephrectomy, have been accomplished by urologic surgeons.

The Saturday morning session concluded with a well illustrated presentation of hand surgery by Daniel Singer, MD, associate professor, JABSOM. Trigger finger repair, Dupuytren's contracture, bone grafts for non-unions, carpal tunnel surgery and tendon injuries were all shown to be amenable to micro-repair.

An additional unscheduled presentation was made by epidemiologist Lauren Pang, MD, regarding the recent outbreak of Dengue Fever in the islands. Using excellent projections, and speaking without notes, he discussed the signs, symptoms, disease progression, and transmission of Dengue. Drawing on his experience in SE Asia and latin America, Dr. Pang related the life cycle of the Aedes albopictus mosquito prevalent in Hawaii which is carrying the disease. This was a very informative and authoritative lesson for everyone in what to expect from this previously rare illness in Hawaii.

The final program on Sunday was devoted to e-medicine: Dawn of the Digital Age. William G. Chismar, Ph.D. Professor, College of Business Administration, University of Hawaii, kicked off the morning with the web for practicing physicians. The internet provides an inexpensive and incredibly rich avenue for basic information. Problems center around cost, liability for medical care, preservation of patient privacy and potential commercial influence. Administratively, use of the web is a certainty; clinically, use and value is less clear, and many facets remain to be defined.

Douglas A. Perednia, MD, internist and President of Association of the Health Service Providers in Portland, Oregon, presented a scenario designed to lower the medical liability risk. Noting that $16 billion is sucked out of the health care system into the tort system, and that patients receive 35% or less of this expense, he described an electronic system of limiting liability. By minimizing communica-

tion errors, system failures and technical errors with a broad electronic network, patients and doctors can have a system which will minimize insurance loss. Dr. Perednia stated that the economics and advantages of telehealth are so profound that their long-term and widespread deployment are inevitable.

Colonel Donald Person, MD, of Tripler Army Medical Center presented a fascinating illustrated program of the Pacific Island Health Care Project. Through the use of telemedicine many patients can receive care without being transferred to Tripler. Letters, faxes, and long distance phone calls have been abandoned. A web based electronic consultation/referral network was established at ten sites with computer, digital camera and scanner. The medical director reviews the consultations, and forwards them to specialists for their recommendations. Excellent mechanism for saving time, providing prompt diagnosis and care, and saving the government lots of travel dollars.

A final thought - perhaps for the editorial page. This year a dedicated committee of HMA members planned and constructed a program of medical education for attendees at the annual meeting. Our medical association staff worked long hours to plan, promote and coordinate location, faculty, sponsors, and social activities. A great collection of exhibitors offered material and enthusiasm, and the Hyatt Regency Hotel at Poipu Beach was a perfect location. This year, like so many others, the material was cogent, well presented and well timed, clinically important, and on the moving, cutting edge of health care. This program without a doubt was one of the very best educational meetings ever presented. Moreover, the cost was remarkably economical for the number of hours of continuing medical education. The curious part is why so few of our members took advantage of this truly excellent bargain offered by the annual meeting committee. Less than 10% of members of the Hawaii Medical Association were present to profit from the knowledge and skills of the distinguished faculty presenting material which is of significance and importance to everyone in the health care system.

Women and Heart Disease

American Heart Association
Fighting Heart Disease and Stroke

Why coronary heart disease is a major health problem for women:

- As women approach menopause, their risk of heart disease increases and continues to rise with aging.
- Women with diabetes have 3 to 7 times the risk of heart disease as men.
- Fewer women than men are quitting smoking.
- About 44% of women 55 to 64 have high blood pressure.



©1999, American Heart Association

Letters to the Editor

Dear Dr. Goldstein:

I am writing to acknowledge receipt of a copy of your recent note and the enclosed copy of the Hawaii Medical Journal. I enjoyed reading your kind words about Bud Smyser. He was indeed an outstanding public servant and journalist. Your tribute to his decades of contributions was touching. I do not know of a finer individual to have been named a Honorary Doctor of Medicine!

Aloha,
Daniel K. Inouye
United States Senator

— — — — — — — — —

Dear Dr. Goldstein,

I wish to apologize and take full responsibility for the shabby quality of the article written by myself and published in the Hawaii Medical Journal, Nov. 2001, Vol. 60, No. 11, pp. 295-296.

While I do not believe the paper contains any serious errors, it clearly does not meet the minimal scientific and writing standards of the Hawaii Medical Journal of the Hawaii Medical Association and my Department of Medicine of the John A. Burns School of Medicine, University of Hawaii at Manoa.

Sincerely,
Richard Kekuni Blaisdell, MD

Comment from the Editor

Dear Dr. Blaisdell,

Your apology is accepted. The manuscripts in the special issues on Alternative Medicine, October and November 2001 were accepted "as is" presented to the journal. Because these were special issues the manuscripts were not submitted for peer review, as is usually done. Mahalo Kekuni.

— — — — — — — — —

Dear Dr. Goldstein,

I was pleased to see that the Journal devoted an issue to alternative medicine. While my training and practice is fully within "mainstream", I try to keep abreast of developments in the areas of complementary and alternative medicine (CAM) that may benefit my patients.

I was disappointed, however, when I turned to the article entitled "Is There Any Evidence?" by Dr. Tabrah. I expected an informed discussion of the current state of scientific research in this growing

field. Instead, I found a vague depiction of CAM modalities as "systems of highly skilled interventional psychiatry," and a rehash of the old-line attitudes of standard medicine, which basically says: "We real doctors know what scientific medicine is, and this stuff doesn't cut it. Maybe someday, if they can test these 'outrageous claims' according to our rules, we'll look at it again."

Dr. Tabrah seems to have ignored the large and growing body of research on many aspects of CAM. As one small example: the book "The Wholistic Pediatrician" by Kathi Kemper MD (Associate Professor of Pediatrics at Harvard Medical School and Director of the Center of Holistic Pediatric Education and Research at The Children's Hospital in Boston) includes 47 pages of scientific citations from sources including the New England Journal of Medicine and Journal of Pediatrics. And that book was published 5 years ago! Academic centers for integrative medicine at Harvard, the University of Minnesota, and the University of Arizona, among others, as well as the Institute for Complementary and Alternative Medicine at the NIH, have been encouraging the application of the principles of rigorous scientific research to many fields of CAM, with productive results.

The readers of the Journal should be given a more informative discussion of this important topic.

Aloha,
Mark L. Cohan MD, FAAP

To the Editor:

I appreciate the opportunity to reply to Dr. Mark Cohan's thoughtful critique of my article, "Is There Any Evidence" in the Oct. 2001 HMJ.

Dr. Cohen, in his paraphrase of my concern about poorly controlled studies, has me say in his words, "maybe someday, if they can test their outrageous claims *according to our rules* (italics mine) we'll look at it again."

Yes, indeed, "our rules" to which Dr. Cohen seems to object, happen to have a long and brilliant history of separating facts from nonsense. The rules are clear—that statistically sound, randomized, controlled, double-blind clinical trials, are the only road to clinical reality. Most CAM awaits this attention.

Dr. Cohen calls attention to Dr. Kathi Kemper's excellent book, "The Holistic Pediatrician" which I have. In chapter 2, in a general discussion of complementary and alternative medicine, she describes as "The Gold Standard: The Randomized, Controlled, Double-Blind Clinical Trial" for its evaluation. Throughout the book, among her suggestions of harmless holistic remedies, she repeatedly advises against numerous CAM practices that have never been touched by a valid clinical trial.

In closing, the following unsolicited note from Dr. John T. McDonnell, quoted with his permission, suggests that good science still lives.

30 Oct 01
Frank,
Great article (HMJ 2001 Oct). While the pendulum has swung away from critical thinking, your comments, published as they are, will serve to remind physicians in years to come, that the power of the double-blind placebo controlled study was not forgotten by all of us in 2001—

Despite some possible disparities in what Dr. Cohen and I see in the current evidence for clinical applications of CAM, I am sure he and the entire clinical community agree wholeheartedly that intense CAM research is needed, and that we can all rejoice on our current public interest and funding.

Sincerely yours,
Frank L. Tabrah MD

American Heart Association®
Fighting Heart Disease and Stroke

On Being Smoke Free

- **27.1 percent of men and 22.2 percent of women age 18 and older are smokers, putting them at increased risk of heart attack, stroke, cancer and other potentially deadly diseases.**
- **Every year 40,000 nonsmokers die from cardiovascular diseases resulting from exposure to secondhand tobacco smoke.**



HeartStroke Briefs

For more information, call 1-800-AHA-USA1 or visit www.americanheart.org

8/2000 10-0169

People know Pueblo for its...



Snazzy Web Site?
(www.pueblo.gsa.gov)



Cool Consumer
Information Catalog?



Easy-To-Remember
Phone Number?
(1-888-8 PUEBLO)



Famous Hot Salsa?

It's not just the salsa. In Pueblo, the free information is also hot. You can get it by dipping into the Consumer Information Center web site, www.pueblo.gsa.gov. Or calling toll-free 1-888-8 PUEBLO (1-888-878-3256) to order the free Catalog. Either way, you can spice up your life with ready-to-use government information on topics like investing for retirement, getting federal benefits, raising healthy children and buying surplus government property.

So remember, if you want information, mild, chunky or otherwise, Pueblo is all you need to know. Sorry, salsa not available through the Consumer Information Catalog or web site.



A public service of this publication and the Consumer Information Center of the U.S. General Services Administration.

Organ Procurement 1999-2000: How is Hawaii Doing?

Kevin H. Higashigawa BS*, Chris Carroll RN**, and Linda L. Wong MD***

Abstract

With the advent of The Final Rule, the state of Hawaii should have potential organ donor identification and referral rates of 100%. However, a retrospective chart review of 4,697 deaths in 1999 and 4,730 deaths in 2000, revealed identification rates of 80% and 84%, and referral rates of 53% and 71%, respectively. Proper recognition and referral of all potential donors is essential to bridging the enormous gap between the supply of organs and its demand.

Introduction

The number of organ donors nationally increases every year. In 1998, the OPTN (Organ Procurement and Transplantation Network)/Scientific Registry Data recorded 9,913 organ donors, a 68% rise from 5,905 donors 10 years prior. Over the same 10-year period, however, the waiting list has grown more than 300%, from 16,026 in 1988 to 65,005 in 1998.[1] The demand for organs still continues to exceed the supply, and the gap between supply and demand continues to widen. Of the more than 60,000 on the waiting list, 35,000 will remain waiting as their disease progresses, and ultimately 5,000 will die this year.[2]

Various attempts have been made to increase the donor pool. For example, public and professional education programs have been implemented to raise both awareness of the donation process and willingness to donate. Donor criteria have been expanded to include cadaveric donors of advanced age and those with coexisting illness who may have been excluded in the past.[3] Advances in medical technology have also allowed the use of non-heartbeating donors in certain situations (Non-heartbeating donors refer to individuals who have achieved cardiac death with cessation of circulation, as opposed to donors who have attained brain death, but cardiac function and circulation remain intact).[4] Furthermore, almost every state has passed "required request" laws, mandating that hospitals ask the next of kin of every potential organ donor for consent to donate. In 1986, the federal government followed with the Omnibus Reconciliation Act, which required hospitals to have set protocols ensuring that all families of potential donors are approached about the possibility of donation.[2] Despite these interventions, however, the growth in organ donation did not meet expectations. In fact, as many as one third of the families of medically suitable donors are never approached regarding organ donation,[5] and underutilization of potential donors has been documented in intensive care units, emergency departments, university teaching hospitals, and community hospitals nationwide.[3]

Correspondence to:
Linda L. Wong MD
2226 Liliha Street, Suite 402
Honolulu, HI 96817

On June 22, 1998, A Final Rule was issued by the Department of Health and Human Services (DHHS), effective August 21, 1998, mandating that hospitals notify organ procurement organizations (OPOs) of all deaths and imminent deaths if they wish to maintain eligibility for Medicare and Medicaid reimbursement.[1] The Rule was modeled after Pennsylvania's "routine notification" law, which substantially increased the state's organ donations. Specifically, organ donation by one Pennsylvania OPO increased by 40%, whereas the national increase in organ donation was only 7.7% for the same period.[2] Routinely notifying OPOs of all deaths and imminent deaths should effectively increase the hospital rates of identification of potential donors and subsequently increase the rates of referral of these potential donors to the OPO.

Methods

Organ Donor Center of Hawaii (ODCH) reviewed the medical records of all deaths that occurred in 1999 (N=4,697) and 2000 (N=4,730) at 17 major acute-care hospitals on the islands of Oahu, Maui, Kauai, and Hawaii to determine the number of medically suitable, potential organ donors in our local population.

For the purpose of the study, a potential organ donor was defined as a brain-dead patient, 70 years of age or younger, without evidence of HIV, cancer, or life-threatening transmissible disease at the time of death (Individual organ function of each patient, however, was not assessed).

The following medical records were therefore automatically excluded from the study:

1. Medical records of patients older than 70 years of age.
2. Medical records with documentation of the following ICD-9-CM codes:

(See Figure 1)

Figure 1.— ICD-9-CM Codes of Exclusionary Medical Conditions

010.00-018.99	Tuberculosis
042.0-044.99	HIV with specified conditions
046.1	Creutzfeldt-Jacob Disease
054.5	Herpetic Septicemia
070.2-071	Hepatitis B surface antigen and Rabies
079.5-079.59	All retrovirus infections
150.0-199.9	Malignant neoplasms, except primary CNS tumors & skin cancers
200-208	Hodgkin's Disease, Multiple Myeloma, Leukemia
230-239.9	Miscellaneous carcinomas
284.0-284.9	Aplastic anemia
288.0	Agranulocytosis
321.1-321.2	Fungal and Viral meningitis
323.0-323.4	Viral encephalitis
551.0-551.9	Gangrene of bowel
765.00-765.03	Extreme immaturity
795.8	Positive serological or viral culture findings for HIV

The medical records of the remaining deaths were reviewed. The individual charts were compared against the hospital's death printout and ODCH's records for completeness. Only those patients that had documentation of meeting brain death criteria without exclusionary conditions were considered medically suitable, potential organ donors.

The medical record reviewers were ODCH transplant coordinators (RNs) with experience in death record reviews using the Association of Organ Procurement Organizations (AOPO) Death Record Review forms (See Figure 2).

Data was summarized by age, race, cause of death, and mechanism of death. The following was then determined:

- *Identification rate* = # potential donors properly identified by hospital staff ÷ all potential donors
- *Referral rate* = # potential donors referred to ODCH ÷ all potential donors
- *Consent rate* = # consents signed for donation ÷ # families approached for consent

Results

Of the 4,697 deaths that occurred in the acute-care hospitals in Hawaii in 1999, 75 were determined to have been medically-suitable potential organ donors upon retrospective review. Among these 75 potential donors, the cause of death was of non-traumatic nature in 64% of the patients, with cerebrovascular accident/intracranial hemorrhage accounting for the main mechanism of death (Table I). 19% of the potential donors were under 35 years of age, whereas 59% were over the age of 50 (Table II).

Of 4,730 deaths in 2000, 79 patients were deemed potential organ donors. Similar to 1999, the cause of death was largely non-traumatic (75% of potential donors), with cerebrovascular accident/intracranial hemorrhage being the main mechanism of death (Table I). 23% of potential donors were under age 35 and 53% were over age 50 (Table II).

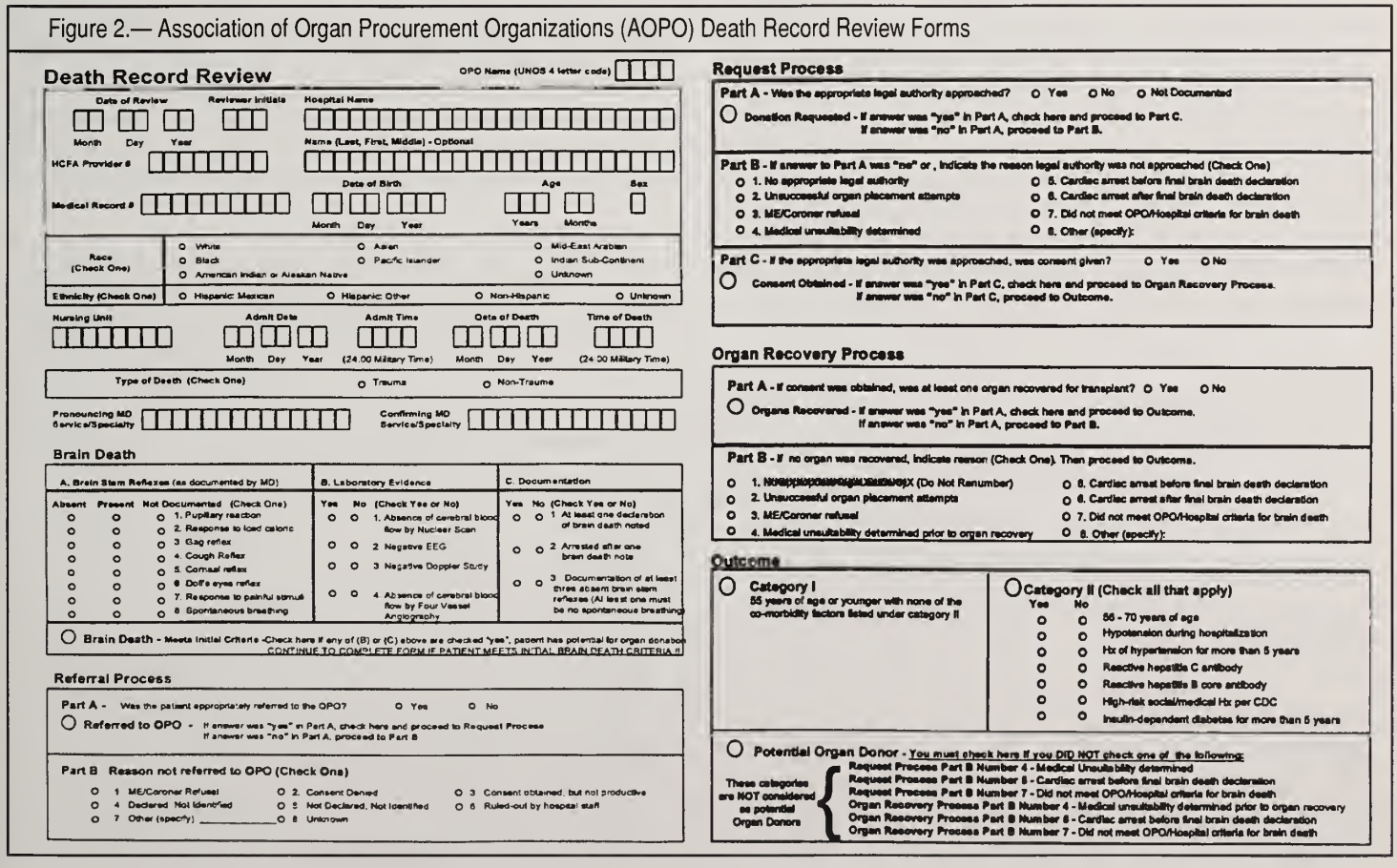
Of the 75 potential donors discovered upon retrospective chart review in 1999, only 60 were in fact identified by health care professionals as prospective donors at the time of death. In 1999, Hawaii's hospitals therefore had an overall identification rate of 80%. Furthermore, of the 75 potential donors, only 40 were referred to the Organ Donor Center of Hawaii, accounting for a referral rate of 53%. 28 of the 48 families who were approached (40 families approached by ODCH and 8 families by hospital staff) agreed to sign the consent for donation, yielding a consent rate of 58% (Table III).

In 2000, 66 of the 79 potential organ donors were properly identified, resulting in an identification rate of 84%. 56 of the potential donors were referred to ODCH, and 33 of the 64 total families approached (56 families approached by ODCH and 8 by hospital staff) consented to donation, yielding a referral rate of 71% and a consent rate of 52%, respectively (Table III).

Discussion

Traditionally, the ideal organ donor candidate has been a relatively young patient with irreversible brain injury sustained from a traumatic incident, with no coexisting medical illnesses and excellent multiorgan function.[2] As the demand for organs continues to exceed the supply, the criteria for medically suitable donors have expanded.

Figure 2.— Association of Organ Procurement Organizations (AOPO) Death Record Review Forms



Most notably, the percentage of donors over the age of 50 rises with each subsequent year. According to national data in 1998, donors in the 50-64 age group comprised 20% of all donors, an increase from 14% in 1990. Furthermore, donors aged 65 and older constituted 8.5% of all donors in 1998, compared to 2% in 1990. In contrast, donors in the 18-34 year old age group decreased from 38% in 1990 to 27% in 1998.[6] The expansion of the potential donor pool to include patients of more advanced age is also very evident in the state of Hawaii. In 1999, potential donors in the 51-65 and over 65 age groups comprised 35% and 24% of all potential donors, respectively. Moreover, in 1999, potential donors over the age of 50 composed 59% of all potential donors, which is three times greater than the percentage of potential donors under age 35. In 2000, potential donors over age 50 continued to comprise a substantial percentage of the total pool at 53% (See Table II).

The increase in the average age of donors may also be partly attributed to the increase in the proportion of donors who die from primary central nervous system events. Nationally, the percentage of donors who died from cerebrovascular accidents increased from 41% in 1994 to 44% in 1998, while donors who died from head trauma decreased from 49% in 1994 to 44% in 1998.[7] In general, individuals who die from cerebrovascular events tend to be older, while those who die from traumatic injuries tend to be younger. In Hawaii, potential donors who died from a cerebrovascular accident/ intracranial hemorrhage (CVA/ICH) in 1999 constituted 64% of all potential donors, whereas those who died from traumatic injuries comprised only 36%. Similarly, in the year 2000, 66% died from CVA/ICH compared to 25% from trauma (Table I).

The age of the donor has significant implications for organ procurement since fewer organs are typically recovered from older donors. Thus, although the total donor pool may have increased, the average number of organs retrieved per donor most likely decreased. Organs procured from older donors may also have lower graft survival rates. One study demonstrated two-year survival rates for renal grafts from donors over age 55 to be 14% lower than survival rates for grafts obtained from donors aged 16-45.[8] Whether or not the risk of organ failure outweighs the risk of dying while on the waiting list, however, is uncertain. On the other hand, some studies have shown favorable outcomes with organs procured from older donors.[9-12]

Table 1.— Potential Organ Donor Cause and Mechanism of Death (1999 and 2000)

Category	Number		Percentage of Total	
	1999	2000	1999	2000
Potential organ donors	75	79	100%	100%
Cause of Death				
Medical/Non-Trauma	48	59	64%	75%
Trauma	27	20	36%	25%
Mechanism of Death				
CVA/ICH	48	52	64%	66%
Head Trauma	11	11	15%	14%
Anoxia	8	7	10%	9%
MVA	5	6	7%	7%
GSW	3	3	4%	4%

Perhaps the biggest barriers in organ donation today center around the three main stages of the organ donation process. These stages include: 1) Hospital identification of potential organ donors; 2) Hospital referral of potential organ donors to the OPO; and 3) Obtaining consent for organ donation by the patient's family. The issue of consent for organ donation is extremely complex. It involves a dynamic interaction between grieving family members, physicians, and OPO staff, and also depends upon variables such as the timing of the request, the patient's demographics, and the personal characteristics of the individual making the request. The issue of identification and referral, however, is more concrete. Many potential donors are lost simply because they are not identified and/or referred. It is estimated that as many as 27% of the medically suitable organ donors in the United States are not identified.[2] Various studies have shown that hospital staff consistently do not recognize many potential donors.[13-15] Low rates of identification can be attributed to several reasons. For example, hospital staff with a lack of knowledge of organ donor criteria may exclude potential candidates. Similarly, a lack of understanding of the concept of brain death and its determination may prevent the identification of many potential donors.[2] Low rates of referral to the OPO may simply be a reflection of the inability to recognize a potential donor. Unsatisfactory referral rates may also be attributed to an uncertainty as how to initiate the referral process. A reluctance to spend the extra time evaluating, documenting, and establishing contact with the OPO is cited as another possible reason for low rates of identification and referral.[2,3,16]

The Final Rule was designed to circumvent the aforementioned pitfalls of identification and referral. The stipulation of notifying the OPO of all deaths and imminent deaths, regardless of age or disease state, takes the responsibility of evaluation of potential donors away from the hospital staff and places it in the hands of specially trained OPO members.[2] Furthermore, prompt identification and referral of potential donors expedites the entire donation process, including actual organ retrieval. The timeliness of organ retrieval is essential since organ viability decreases quickly once brain death has oc-

Table 2.— Potential Organ Donor Demographics (1999 and 2000)

Category	Number		Percentage of Total	
	1999	2000	1999	2000
Potential organ donors	75	79	100%	100%
Age				
0-20	4	7	5%	9%
21-35	10	11	14%	14%
36-50	17	19	22%	24%
51-65	26	24	35%	30%
65-70	18	18	24%	23%
Ethnicity				
Japanese	23	22	31%	28%
Filipino	17	18	22%	23%
Caucasian	15	21	20%	26%
Hawaiian	10	8	13%	10%
Pacific Islander	4	2	5%	3%
Mixed/Other	3	3	4%	4%
Korean	2	1	3%	1%
Chinese	1	4	2%	5%

curred. Without aggressive support, cardiac arrest and end organ failure will ensue within approximately 6 hours of brain death for 20% of patients and within 24 hours for 50% of patients.[8] Thus, late notification of the OPO will not only delay the organ retrieval process but will also decrease the number of suitable organs available for transplant.

If followed diligently, the Final Rule implemented in 1998 should ideally result in statewide identification and referral rates of 100%. Yet, in 1999, the hospitals in Hawaii averaged an identification rate of only 80% and a referral rate of 53%. The year 2000 showed some improvement in the referral rate to 71%, but the identification rate only slightly increased to 84%. The 4% increase in the identification rate is discouraging, and although the rise in the referral rate to 71% is promising, it is still far from ideal.

Based on retrospective chart review of all patient deaths in 1999 and 2000, 28 potential donors were not identified, and among the 126 who were recognized, only 112 were actually approached. Using the national average consent rate of about 50% and the current rate of 3.21 organs recovered and transplanted per donor,[6] this data translates into approximately 67 lost organs.

Several studies have confirmed the efficacy of health care staff education and training in improving identification and referral rates.[3,5,16] In one study, the referral rate of an urban teaching emergency department rose from 30% to 100%, one year after intensive education of the ED personnel.[16] The educational campaign included a lecture about the current need for organs, the role of physicians and nurses in the donation process, the methodology of identifying potential donors, and the need for early referral and aggressive vital sign maintenance in potential donors. An OPO representative would visit the ED every 2 to 3 months and reeducate the staff. Facilities that emphasize the organ donation process and work closely with OPOs on a daily basis have been shown to outperform other hospitals in identification, request, and consent rates, as well as overall organ procurement.[16-17] Follow-up interventions are necessary, given that most educational programs have been documented as having a short duration of effect.[18-21]

Table 3.— Hawaii's Rates of Identification, Referral, and Consent (1999 and 2000)

Process Variable	Number		Rate	
	1999	2000	1999	2000
Identification				
Potential Donors Identified	60	66		
Total Potential Donors	75	79		
Identification Rate			80%	83%
Referral				
Potential Donors Referred	40	56		
Total Potential Donors	75	79		
Referral Rate			53%	70%
Consent				
Potential Donor Family Approached	48	64		
Consent for Donation Given	28	33		
Consent Rate			58%	52%

Conclusion

Although Hawaii's organ donation rates have increased over the years, there is still much room for improvement. In order to substantially increase organ donation, hospitals, OPOs, policy makers, and the general public must develop close, positive, and responsive relationships. Proper recognition and prompt referral of all potential organ donors are essential to bridging the gap between the supply of organs and its need. Each hospital must determine the most effective method for referring all imminent deaths to the ODCH. Ultimately, better awareness of the Final Rule and a greater appreciation of its implications will be necessary for its full effect to be realized.

Authors

*Kevin H. Higashigawa BS, John A. Burns School of Medicine, University of Hawaii, 1960 East-West Road, Honolulu, Hawaii
**Chris Carroll RN, Organ Donor Center of Hawaii
***Linda L. Wong MD, Department of Surgery, Institute of Transplantation, St. Francis Medical Center, Honolulu, Hawaii

References

1. U.S. Department of Health and Human Services. 1999 *Report to Congress on the Scientific and Clinical Status of Organ Transplantation.* Washington, DC;1999:1-13.
2. Ehrle RN, Shafer TJ, Nelson KR. Referral, request, and consent for organ donation: Best practice-A blueprint for success. *Critical Care Nurse.* 1999;19(2):21-32.
3. Riker RR, White BW. The effect of physician education on the rates of donation request and tissue donation. *Transplantation.* 1995;59(6):880-884.
4. Kootstra G. The asystolic, or non-heartbeating, donor. *Transplantation.* 1997;63(7):917- 921.
5. Robertson VM, George GD, Gedrich PS, Hasz RD, KochikRA, Nathan HM. Concentrated professional education to implement routine referral legislation increases organ donation. *Transplant Proc.* 1998;30:214-216.
6. Rosendale ill, McBride MA. Organ donation in the United States: 1990-1998. In: Cecka, Terasaki, eds. *Clinical Transplants* 1999. Los Angeles, CA:UCLA Immunogenetics Center; 1999:83-94.
7. U.S. Department of Health and Human Services. *1999 Annual Report of the U.S. Scientific Registry of Transplant Recipients and The Organ Procurement and Transplantation Network.* Washington, DC;1999:34.
8. Hauptman PJ, O'Connor KJ. Procurement and allocation of solid organs for transplantation. *NEJM.* 1997;336(6):422-429.
9. Cacciarelli TV, Sumrani N, Scriven R, DiBenedetto A, Hong JH, Sommer BG. Influence of donor and recipient age on renal allograft survival time. *Transplant Proc.* 1993;25:3140-2.
10. Sumrani N, Delaney V, Ding ZK, et al. Renal transplantation from elderly living donors. *Transplantation.* 1991;51:305-9.
11. Hauptman PJ, Kartashov AI, Couper GS, et al. Changing patterns in donor and recipient risk: A 10-year evolution in one heart transplant center. *J Heart Lung Transplant.* 1995;14:654-8.
12. Mor E, Klintman GB, Gonwa TA, et al. The use of marginal donors for liver transplantation: A retrospective study of 365 liver donors. *Transplantation.* 1992;53:383-6.
13. McNamara P, Franz HG, Fowler RA, Evanisko MJ, Beasley CL. Medical Record Review as a measure of the effectiveness of organ procurement practices in the hospital. *Jt Comm J Qual Improv.* 1997;23:321-333.
14. Garrison RN, Bentley FR, Raque GH, et al. There is an answer to the shortage of organ donors. *Surg Gynecol Obstet.* 1991;173:391-396.
15. Nathan HM, Jarrell BE, Broznik B, et al. Estimation and characterization of the potential renal organ donor pool in Pennsylvania: Report of the Pennsylvania Statewide Donor Study. *Transplantation.* 1991;51:142-149.
16. Henderson SO, Chao JL, Green D, Leinen R, Mallon WK. Organ procurement in an urban level 1 emergency department. *Annals of Emergency Medicine.* 1998;31(4):466-470.
17. Sheehy E, Poretsky A, Gortmaker SL, et al. Relationship of hospital characteristics to organ donation performance. *Transplant Proc.* 1996;28:139-141.
18. Meyer TJ, Van Kooten D, Marsh S, Prochazka AV. Reduction of polypharmacy by feedback to clinicians. *J Gen Intern Med.* 1991;6:133.
19. Kaye W, Mancini ME. Retention of cardiopulmonary resuscitation skills by physicians, registered nurses, and the general public. *Crit Care Med.* 1986;14:620.
20. Gass DA, Curry L. Physicians' and nurses' retention of knowledge and skills following training in cardiopulmonary resuscitation. *Can Med Assoc J.* 1983;128:550.
21. Martin WJ, Loomis JH, Lloyd CW. CPR skills: Achievement and retention under stringent and relaxed criteria. *Am J Public Health.* 1983;73:1310.

A Systematic Approach To Provider Based Disability Management

Paul J. Smith MD, MPH and Ivan Preis MD, MS

Abstract

Tacit within the treatment goals of every workers' compensation case is timely return of the worker to pre-injury status. Assigned disability status must truly reflect the extent of medical impairment and functional limitations affecting return to his/her customary job. Permanent Partial Disability (PPD) awards with associated legal involvement are widely acknowledged as a major cost driver within the Workers' Compensation system. Medical providers are encouraged to become pro-active disability management specialists for each workers' compensation case. Provider review of critical process checkpoints and integration of medical treatment with disability guidelines maximize benefits to the injured employee and the employer. This in turn enhances providers' control of patient care with less emphasis on external case managers.

For the past half century, workers' compensation has stood as the primary medical and wage loss replacement system for workers injured on the job. Injuries and illnesses *arising out of and during the course of employment* constitute the definition of a work-related injury.[1,2] On filing an injury claim, the employee promulgates entry into a complex medicolegal system of care. The workers' compensation system provides the legislative construct, integrating medical treatment of the injury/illness with wage replacement for lost work capabilities. Medical management of workplace injuries has shown relatively little change. Emphasis continues to be placed on subjective symptom cures, as opposed to objectively, based clinical endpoints of anatomical/physiological function and work capability. This dichotomy in treatment management underlies why work-related injuries and illnesses remain prevalent as a significant proportion of employer cost.

Ideally, appropriate medical treatment integrated with motivated return to work should be complementary. However, these goals often become diametrically opposed and compromise final outcomes. The medical provider orchestrates an often complex treatment process that concludes when the employee reaches maximum medical improvement and work capability.

Disability Divergence

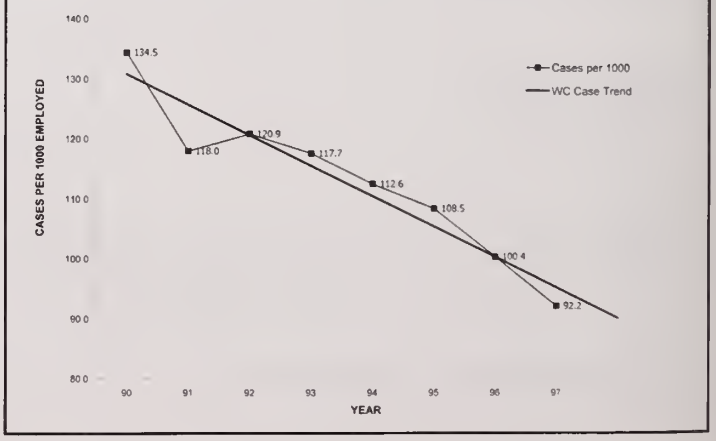
The term *disability management* reflects the planned minimization of *days away from work* or *days on restricted work activity* as a medically appropriate and beneficial aspect to injury/illness recovery. While a given degree of impairment may be closely corroborated by experienced providers, assignment of disability often differs widely. Disability management, more frequently than not, reflects a process of negotiation between the injured worker and the medical provider. What an injured person asserts as his/her functional capabilities and what the physician affirms as work limitations often results in a gap between perceived work capabilities and assigned work duty status.[3] The gap in perception of disability between the participants in a workers' compensation case may be termed a *disability divergence*. It frequently evolves into a negotiation of work duty status between the injured worker and treating provider. When disability divergence occurs, it can have the effect of reinforcing the injured role, protracting disability, and increasing case costs.

Hawaii Workers' Compensation Costs

In 1995, Hawaii enacted legislation aimed at reducing the upwardly spiralling costs of workers' compensation insurance. One initiative included emphasizing safety incentives for employers to reduce worksite injuries. Additionally, the workers' compensation medical fee schedule was reduced by 54% and based on 110% of Medicare. From 1995 through 1998, total workers' compensation costs did in fact fall from an all time high of $343,079,773 in 1994 to $233,224,525 in 1998. At the same time however, the number of processed cases dropped from 61,353 in 1994 to 45,910 cases in 1998.[4] Normalizing to a rate of workers' compensation cases per 1000 employed demonstrates essentially the same negative slope line between 1990 and 1997(Figure 1). Clearly, the decline in cost paralleled the progressive reduction in volume of processed cases. Review of national workers' compensation data revealed a similar trend for declining volume of injuries.[5] This would seem to call in doubt the presumption that legislative change made any significant impact on cost containment. Instead, it would appear that legislation simply occurred serendipitously at a point when a declining trend of workers' compensation injuries was already occurring.

Deeper analysis of the declining case and cost trends reveals interesting insights. First, despite declining total costs, average cost

Figure 1.— Trend of WC Cases Per 1000 Employed, 1990-1997



per case remained relatively constant with a hint of an upward trend in 1998. Secondly, workers' compensation cases with medical involvement represented 62% of total cases though actual medical care represented only 37% of total costs. In comparison, temporary total disability, temporary partial disability, and permanent partial disability represented 31% of cases but 51% of total costs (Figure 2). Though these figures are specific to 1998 they are closely representative of the period from 1990-1997.[4] The contribution of disability as the major factor in total cost of a workers' compensation case brings to focus the need for a reliable model of provider-based disability management (PBDM).

Critical Checkpoints

Improvements on the process of providing medical care for the injured worker have focused on diagnosis-specific guidelines for reducing medical cost and length of disability.[6] These guidelines are primarily based on large aggregate populations. Though this approach has produced an increased awareness by medical providers of the necessity for prudent medical management of work-related injuries, it falls short on providing a clinically useful, easily applicable model for an individual case.[7] Physician-directed disability control is key in achieving successful clinical outcomes. A standard approach is suggested, based on review of critical checkpoints and integration of medical treatment with disability guidelines.

Critical checkpoints manifest themselves in four categories: *pre-injury status, diagnosis, causality,* and the *treatment plan*. Knowing the claimant's *pre-injury status* of functional capabilities is critical in establishing the baseline goal of restorable work ability. Pre-existing medical conditions, disabilities, and handicaps may create added barriers to returning the claimant to his usual and customary job. An *accurate diagnosis* is key in guiding the appropriate medical treatment of the case as demonstrated by consistency with established evidence based treatment and disability guidelines. *Causality* marks the crucial merger of the medical and legal systems within the Workers' Compensation system. The prudent determination of the work-relatedness of an injury establishes the employer's responsibility for the cost of medical treatment and indemnity. This process acts as a vital checkpoint for fraudulent claims. The *treatment plan* is the provider's tool for charting the medical and administrative course of care toward the ultimate goals of maximum medical improvement/stability and return to customary job duties. Table 1 summarizes the critical checkpoints for optimal physician, directed case management.

Treatment success is measured by timely **Maximal Medical Improvement/Stabilization** and **return to work.**[8] This does not include treating pre-existing conditions beyond pre-injury status. Assignment of injury-specific temporary total disability (TTD) should be justified in terms of optimal outcome. Clinically, the question to be asked is how does authorizing days away from work promote the desired treatment goal? Since non-medical expenditures represent the major cost drivers across the board, proper disability management of each case is just as important as first rate medical treatment.

When a treatment plan is ineffective, it is usually due to inappropriate assignment of either disability, causality, or diagnosis. Medical treatment of inappropriate disability is not only ineffective but also costly, resulting in increased utilization of resources and consultations by specialists who are yet further removed from appropriate case-specific disability management. A lengthy search for anatomical or physiological pathology accountable for protracted disability behavior frequently fails. Providers are well advised to responsibly limit ineffective treatments when disability management, rather than injury treatment, becomes the primary objective. Identification of behavioral and motivational disability drivers that may be separate from the initial injury report is imperative.[9] Whenever the injured role is utilized for a secondary gain advantage, it fosters inappropriate or even iatrogenic disability. This can lead to further ineffective and/or unnecessary treatment.

Conclusions

A revised WC-2 form that structures the essential information flow described above is currently being finalized by a working committee, consisting of WC care providers, insurance carriers and Disability Compensation Division of the State of Hawaii. This standardized tool for collection and exchange of vital information will streamline decision-making in treatment planning for the injured worker.

Provider-directed disability control and improved administrative process promoting effective communication among all parties are key ingredients for optimal clinical outcomes and decreased costs.[10] Unfortunately, the present system in Hawaii often encourages

Figure 2.— 1998 Distribution of Workers' Comp Costs

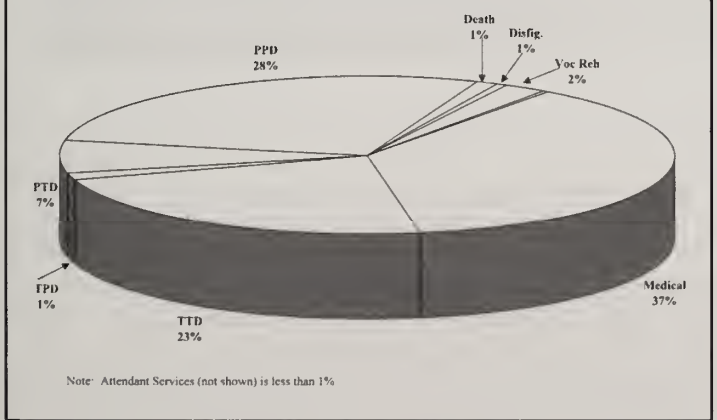


Table 1.— Critical Checkpoints of Disability Management

Critical Checkpoints	Primary Goals
1. Pre-injury Status	Extrapolate baseline functional status in and out of work environment
2. Diagnosis	Determine accurate diagnosis for appropriate and effective treatment
3. Causality	Establish work-relatedness vs. other cost liability
4. Treatment Plan	Progress to maximal medical improvement and Return-To-Work

cavalier attitudes toward early disability management that is further compromised by medical reimbursement rates that approach the lowest level in the nation. The added medical and economic value of provider-based disability management (*PBDM*) is significant and leads to improved provider case control and may well lead to higher compensation while providing timely achievement of treatment plan goals. Ultimately, State Governing Disability Compensation Boards recognize that a worker's disability management belongs in a doctor's hands rather than adrift in a lawyer's domain.

References

1. Rondinelli RD, Katz RT. *Impairment Rating and Disability Evaluation.* Philadelphia, Pennsylvania: W.B. Saunders Company; 2000:145
2. State of Hawaii Workers' Compensation Law ch 386, H.R.S.; ch 10, Title 12
3. Demeter SL, Andersson GBJ, Smith GM. *Disability Evaluation.* St. Louis, Missouri: Mosby-Year Book Inc; 1996:2-3
4. State of Hawaii Workers' Compensation Data Book; 1990,1991,1992,1993,1994,1995,1996,1997,1998
5. Bureau of Labor Statistics. 1998 OSH Summary Estimates Supplemental Charts 1990-1998. Available at: ftp://146.142.4.23/pub/special.requests/ocwc/osh/osch0020.pdf. Accessed December 16, 1999.
6. Sinclair S. The Role of Clinical Evidence in Policy Making. In: Harris JS, Loeppke RR. *Integrated Health Management: The Key Role of Occupational Medicine in Managed Care, Disability Management, Productivity, Prevention, and Integrated Delivery Systems.* Beverly Farms, Massachusetts: OEM Press; 1998:224-227
7. Burton WN, Conti DJ. Disability Management: Corporate Medical Department Management of Employee Health and Productivity. *J of Occupational and Environmental Medicine.* October 2000;42:1006-1012
8. Rondinelli RD, Katz RT. *Impairment Rating and Disability Evaluation.* Philadelphia, Pennsylvania: W.B. Saunders Company; 2000:147-149
9. Heidel SH. Behavioral Disability Case Management. In: Harris JS, Loeppke RR. *Integrated Health Management: The Key Role of Occupational Medicine in Managed Care, Disability Management, Productivity, Prevention, and Integrated Delivery Systems.* Beverly Farms, Massachusetts: OEM Press; 1998:68-74
10. Robinow AL. Moving to a Better Health Care System: The Buyers Health Care Action Group Approach to Integrating Benefits. In: Harris JS, Loeppke RR. *Integrated Health Management: The Key Role of Occupational Medicine in Managed Care, Disability Management, Productivity, Prevention, and Integrated Delivery Systems.* Beverly Farms, Massachusetts: OEM Press; 1998:14-16

Your New Best Friend...



The FREE Consumer Action Website – it's got thousands of links to companies. And government agencies – the names, numbers, advice, and connections you need to get your wrongs righted.

Log on to **www.pueblo.gsa.gov**, and click on the FREE Consumer Action Website.

www.pueblo.gsa.gov

A PUBLIC SERVICE OF THE U.S. GENERAL SERVICES ADMINISTRATION

FIVE WAYS TO DIE ON THE GOLF COURSE:

1. Hit by a golf ball.
2. Run over by a golf cart.
3. Whacked by a golf club.
4. Struck by lightning.
5. Forgot your hat.

Surprisingly, one million new cases of skin cancer are detected every year. One person an hour in the U.S. dies from melanoma, the deadliest form of skin cancer. If you spend a lot of time in the sun, you should protect yourself. One out of five Americans develops skin cancer during their lifetime. Don't be one of them. Stay out of the midday sun. Cover up. Wear a hat. Seek shade. And use sunscreen. For more information on how to protect yourself from skin cancer, call 1-888-462-DERM or visit www.aad.org.

AMERICAN ACADEMY OF DERMATOLOGY

Residents' Case Series

A 14-year-old Girl with Refractory Seizures

Julie Won Ireland, MD*, and Byron Aoki, MD**

A 14-year old Micronesian female with no significant past medical history presented to the emergency department with tonic-clonic seizures. Earlier in the evening, the patient went to the movies with her family and was in her usual state of health. The patient had a history of dental caries and had a toothache that evening. When getting ready for bed, she received permission from her mother to take another family member's medication to self-treat the tooth pain. Within an hour of taking the medication, the patient's mother heard a loud cry from the patient's room. At that time, the patient was found to be having a generalized tonic-clonic seizure. An ambulance was called, and when the paramedics arrived, she was unresponsive and still actively seizing. She was given diazepam 3.5 mg intravenously without effect. She was given another 3.5 mg of diazepam and the seizure resolved. The total time of the seizure was approximately thirty minutes. The patient was transported to the emergency department, remained unresponsive and began seizing again upon her arrival.

The patient had no significant past medical history except dental caries. She was born by normal spontaneous vaginal delivery in the Marshall Islands. Her prenatal and postnatal courses were unremarkable. She had no previous hospitalizations, no surgeries, no allergies and was on no routine medications. Her immunizations were up to date. She had no recent travel, no exposure to toxins or pets, did not smoke cigarettes, drink alcohol or take illicit drugs, and had no significant family medical history. She was one of six children, ages ranging from 2 to 22 years. Her parents were divorced, and the children lived with their mother. Her family stated that except for the toothache, she was perfectly well earlier that evening without any complaints of trauma, headache, neck stiffness, photophobia, fever, rash or other problems. The medication she had taken for her tooth pain belonged to a family member.

On physical exam, the patient was initially unresponsive and having generalized tonic-clonic seizures. Her vital signs included: heart rate 155 beats per minute; blood pressure 133/61; temperature 100.2 tympanic; oxygen saturation 100% while receiving assisted respirations and 100% oxygen. There were no obvious rashes or signs of trauma. Her pupils were 4 mm and equal and reactive to light. Her lungs were clear and her cardiac exam was normal except for tachycardia. Her abdomen was soft, bowel sounds were present. Her extremities were normal. When the seizures had stopped, she remained unresponsive and had nonpurposeful movements of all extremities.

Laboratory studies obtained in the emergency department revealed: A white blood count of 26.7 x 10^9/L with 68% neutrophils and 32% lymphocytes; hemoglobin 12.5 g/dL and hematocrit 36.7 %; platelets 322,000. Chemistries included: sodium 139 mmol/L (136-145); potassium 3.0 mmol/L (3.3-5.1); chloride 103 mmol/L (96-108); bicarbonate 8 mmol/L (21-31); anion gap 28 (4-16); BUN 8 mg/dL (6-19); Cr 0.9 mg/dL (0.4-1.1); glucose 302 mg/dL (70-110); calcium 9.1 mg/dL (8.4-10.2); phosphorus 5.9 mg/dL (2.6-4.5). Liver function tests were within normal limits. An arterial blood gas on 100% oxygen showed pH 7.19, pCO2 38, pO2 504, bicarbonate 15, base excess –12. A urine toxicology screen was negative for illegal drugs. A urine pregnancy test was also negative. Blood salicylate and acetaminophen levels were negative. A CT scan of the head did not show any bleeding or masses.

The medication that the patient took for her toothache was brought to the emergency department by the paramedics. It was a regular pharmacy prescription bottle labeled "amoxicillin". The contents of the bottle were inspected and two different types of pills were noted. The first type was identified as amoxicillin, the other was isoniazid.

The patient continued to seize. She was given phosphenytoin and phenobarbitol to control her seizures, and she was intubated. At this point, isoniazid toxicity was suspected, so the patient was given 5 grams of pyridoxine IV and activated charcoal. An isoniazid level was obtained and later found to be 54.4 mcg/ml (toxic level is greater than 10 mcg/ml). An EEG showed a diffuse encephalopathic process with high amplitude delta wave and no seizure discharges. The patient remained unresponsive and intubated in the pediatric intensive care unit for ten days. On her tenth hospital day, she became arousable and fairly quickly became responsive. She ultimately fully recovered and was discharged home.

Discussion

Isoniazid (INH) was introduced in 1952; it is the hydrazide of isonicotinic acid. It is used for tuberculosis (TB) either as preventative therapy or for active disease in combination with other medications.[1] The incidence of isoniazid toxicity in the pediatric population is unknown; however, toxic events involving this medication have increased as this medication is used with increasing frequency. With the resurgence of tuberculosis in HIV-infected patients and recent immigrants from areas with endemic TB, INH usage has increased.[2] The State of Hawaii has a high per-capita rate of TB and people immigrating from the Pacific Islands and Asia, where the prevalence of TB is high, have contributed to the high rate here. Consequently, INH use in Hawaii has also increased as therapy for active disease or prophylaxis.

In children, the usual dose of INH is 10-15 mg/kg in contrast with doses of 5 mg/kg in adults. Neurotoxicity and seizures can occur with ingestion of 40 mg/kg or less.[3] INH is 95% bioavailable and effects after a toxic dose are usually seen within 30 minutes to 2 hours of ingestion.[2] Therapeutic doses in children result in peak blood levels of 6-20 mg/ml. Toxic levels are greater than 10 mg/ml, or 3.2 mg/ml two hours after ingestion, 0.2 mg/ml 6 hours after ingestion. [3] INH is metabolized by acetylation and excreted chiefly in the urine. The half-life depends on the acetylation status of the patient which is a genetically determined factor. The half-life in "fast" acetylators is approximately 90 minutes or less, and 180 minutes in "slow" acetylators.[1] It is estimated that 60% of Caucasians and African-Americans are slow acetylators and 10% of Asian-American and Alaskan natives are slow acetylators.[4]

Iatrogenic overdose of INH while taking the medication as directed is rare. One case described took place in a patient thought to be a slow acetylator; with the medication half-life doubled, it was hypothesized that toxic levels were achieved while on therapeutic doses.

Most acute toxic events from INH come from either suicide attempt or accidental ingestion, as with our patient. Another case in Hawaii involved a teenage girl who ingested a large quantity of INH in a suicidal gesture after a fight with her boyfriend; she suffered a seizure and was brought to the hospital by ambulance. One case-series from Los Angeles involved three siblings and a possible accidental overdose: a four-year old child was prescribed INH for a positive PPD and his two younger siblings, ages 2 1/2 and 1 1/2 years, were brought to the medical facility with generalized convulsions.[5] Another pediatric overdose occurred when an infant was prescribed 300 mg INH daily rather than 30 mg daily.[3] One author (Byron Aoki) saw long term complications in children with INH-induced seizures in the 1970's who were not treated with pyridoxine. They developed permanent neurologic damage in cognition and behavior.

The classic clinical presentation of acute INH toxicity includes the triad of refractory seizures, coma and metabolic acidosis. Other features consist of slurred speech, ataxia, hypotension, fever, peripheral neuritis, nausea and vomiting, hypokalemia, leukocytosis, hyperglycemia with ketonuria and glycosuria.[5,6,7] It is important that the anion gap acidosis coupled with the hyperglycemia does not get mistaken for diabetic ketoacidosis.[3] Our patient had many of these features including refractory seizures, coma, wide anion gap metabolic acidois , leukocytosis, hypokalemia and hyperglycemia.

The mechansim of seizures in INH toxicity is thought to be due to a depletion of the inhibitory neurotransmitter g-aminobutyric acid (GABA).[3] Decreased levels of GABA can result in CNS excitability and seizures. The synthetic pathway for GABA involves glutamic acid decarboxylase. Pyridoxine (vitamin B6) is activated to pyridoxal-5-phosphate which is a cofactor for glutamic acid decarboxylase. INH, in overdose, binds free pyridoxal-5-phosphate, which acutely lowers this cofactor necessary for GABA synthesis, which results in a seizure.[3]

The treatment of INH overdose includes the management of life-threatening symptoms, administration of pyridoxine and supportive care.[6] The initial management includes airway control, maintenance of respirations, and ensuring adequate circulation; this may require endotracheal intubation, intravenous access and intravenous fluids. To stop seizures in children, diazepam 0.1-0.2 mg/kg or lorazepam 0.05-0.1 mg/kg can be given and repeated as needed. Diazepam is thought to be more effective than other anticonvulsants in treating INH-induced seizures, perhaps acting with a synergistic effect with pyridoxine.[8] Pyridoxine should be given intravenously as soon as possible. The pyridoxine dose should be the same dose of INH that was taken (one gram of pyridoxine for every one gram of INH ingested);[7,8] if the amount INH ingested is not known, 5 grams of pyridoxine IV over 5-10 minutes should be sufficient in most cases.[7] If ingestion has occurred within an hour, gastric lavage can be performed followed by 15-30 grams (1-2 g/kg) of charcoal with 1-1.5 grams/kg of sorbitol (up to 50 grams) as a slurry for children. The charcoal dose without the sorbitol can be repeated. If these measures do not control the seizures, hemodialysis may be necessary.

Isoniazid is the fourth leading cause of drug-induced seizures accounting for approximately 5% of all seizures associated with overdose. This is likely to increase following the rise in TB in our community. In our patient, examination of the medication taken indicated this was likely an INH overdose. When the preceding history is not clear, the possibility of INH toxicity must be strongly considered in any case of refractory seizures with metabolic acidosis. Treatment with pyridoxine must be considered as it can dramatically alter the patient's outcome. Finally, emergency departments must be sure that enough pyridoxine is available for treatment.

Authors

*Julie Won Ireland, M.D. Resident in Pediatrics, University of Hawaii John A. Burns School of Medicine

**Byron Aoki, M.D. Associate Professor of Pediatrics, University of Hawaii John A. Burns School of Medicine, Critical Care Pediatrics, Kapiolani Medical Center

References

1. Jawetz, E. Antimycobacterial Drugs. Basic and Clinical Pharmacology. Katzung, B.G. (Ed.) Norwalk. Appleton and Lange. 1995. 707-9.
2. Blanchard, P.D. et al. Isoniazid Overdose in the Cambodian Population of Olmstead County, Minnesota. JAMA 1986, 256 (22): 3131-33.
3. Shah, B.R. et al. Acute Isoniazid Neurotoxicity in an Urban Hospital. Pediatrics, 1995. 95 (5): 700-4.
4. Ellard, GA, Variations between individuals and populations in the acetylation of isoniazid and its significance for the treatment of pulmonary tuberculosis. Clin Pharmacol Ther, 1976. 19:610-625.
5. Miller, J. et al. Acute Isoniazid Poisoning in Childhood. Am J Dis Child, 1980. 134:290-2.
6. Alvarez, F.G. and Guntupalli, K.K. Isoniazid overdose: Four case reports and review of the literature. Intensive Care Medicine, 1995. 21: 641-4.
7. Romero, J.A. and Kuczler, F.J. Isoniazid Overdose: Recognition and Management. American Family Physician, 1998.
8. Wason, S. et al. Single High-Dose Pyridoxine Treatment for Isonizaid Overdose. JAMA, 1981. 246 (10): 1102-4.



Medical School Hotline

Role of Standardized Patients in Medical Education

Michael H. Nagoshi MD, FACP
Assistant Professor, Department of Medicine
John A. Burns School of Medicine
University of Hawaii

Introduction

Standardized or simulated patients (SP's), persons who play the role of patients, have been a part of medical education for over 35 years.[1] The John A. Burns School of Medicine (JABSOM), like many medical schools, has a tradition of using professional patients to assist in teaching specialized physical examination skills including breast, genital and pelvic examinations. JABSOM initiated the development of a Standardized Patient Program in 1989.

Volunteers from the community often serve as both patient and instructor but generally do not portray patients with illnesses. With sufficient training, SPs are able to portray patients with specific medical problems in a consistent, "standardized" manner and to make systematic observations of the bedside clinical skills of the student's who are interviewing or examining them. Consequently, an increasing number of medical schools have developed standardized patient programs to expand the use of SPs to the teaching and assessment of communication and interpersonal skills, history taking and physical diagnosis.[2] Some SPs have real clinical findings (e.g. heart murmur); others are carefully trained to simulate real findings (e.g. rebound tenderness). Although they cannot replace real patients seen in actual patient care settings, SP experiences have become valuable educational tools.

Using SP's for Teaching

The SPs provide direct, hands-on patient care experiences that medical students might not otherwise have and allow the practice of clinical skills in a safe environment (analogous to the way a flight-simulator allows a pilot to practice before flying a real aircraft). Patients with specific medical problems can be made available when they would best fit the medical school curriculum. During the first unit of the curriculum, students interview SP's who portray patients described in specific Health Care Problems, the written case scenarios that form the basis of the Problem Based Learning (PBL) Curriculum. The SP experiences "bring to life" the paper-based problems. The encounters are videotaped and reviewed in small groups. Relevant concepts related to the doctor-patient relationship, interviewing and communication skills are discussed and individual feedback is given to the students. During the cardiovascular unit, every student evaluates a SP with congestive heart failure and during the gastroenterology subunit, a SP with diarrhea.

SPs can be used to create clinical situations for teaching healthcare providers in ways that are not possible during the course of actual patient care. Every medical student independently examines a SP presenting with an acute abdomen, an experience only serendipitously afforded to a few students while working on clinical clerkships and when available, is usually reserved for the more experienced residents and interns. Internal Medicine Residents are asked to inform an SP, who portrays a patient presenting with epigastric pain that she has metastatic cancer. The encounter is observed by a faculty member who provides feedback and instruction on communication techniques to use when delivering bad news. The SP also provides feedback to the resident on his/her bedside manner.

Clinical Skills Evaluation

The Center for Clinical Skills (CCS), at the Kuakini Medical Center is responsible for the development and implementation of the JABSOM SP Program. The program utilizes over 150 active volunteers, ranging in age from 15 to 70, and representing a mix of Hawaii's ethnic groups and occupations. New volunteers are constantly being added to the pool consisting of many people who have participated in the program since its inception. SPs ensure that the community has input into the quality of future physicians that will one day serve it. Post-encounter evaluation by students attest to the ability of the SPs to simulate real patients in a highly believable manner. The CCS provides the rigorous and standardized testing of bedside history taking, physical examination, communication and interpersonal skills required for accreditation by the Liaison Committee on Medical Education (LCME). The University of Hawaii School of Nursing also relies on the CCS to supply patients for the clinical skills assessment of their students.

Prior to the use of SPs, performance-based evaluation of clinical skills was limited by the availability of patients in hospitals who were willing to have medical students examine them. Each student was challenged with patients whose problems varied widely in type and difficulty. The medical student was observed by one of a number of different faculty members. Each evaluator judged clinical competence differently, resulting in arbitrary pass/fail decisions and unreliable comparisons of student performance.

Examinations involving SPs are designed to objectively and systematically compare the clinical skills of all students. Criteria for assessing student performance can be standardized because SPs are able to present the same clinical history or examination findings repeatedly and consistently.[3] Each student is challenged with the same set of patient care scenarios representing a broad range of clinical situations. During a six station Clinical Skills Examination on the Internal Medicine rotation, each student may be required to interview, examine and counsel patients with: 1) chest pain due to an acute myocardial infarction, 2) abdominal pain due to appendicitis, 3) diabetic peripheral neuropathy, 4) chronic cough due to chronic sinusitis, 5) back pain due to herniated intervertebral disc disease, and 6) exposure to HIV infection. The students are allowed from 5 to 30 minutes with each patient depending on the examination. The interview, examination, or task in each station is limited so that it can be completed in the allotted time. Students are scored based on history-taking checklists, and rating scales of interpersonal and communication skills completed by the standardized patients. SPs can be trained to make consistent, accurate and reliable observation of each student.[4] After examining each patient, the student completes a post-encounter exercise by answering written questions regarding the patient encounter and is graded based on predetermined criteria. Scores on SP-based clinical skills examinations have

been shown to predict subsequent performance in residency training.[5]

The SP program provides feedback to both the students and the school in general. Students receive performance data comparing their communication and interpersonal skills to those of their peers. The clinical departments are given feedback generated from overall class performance. For example, data comparing the performance of third year students assigned to the recently developed longitudinal clerkship with the students on the traditional clerkships revealed no difference in clinical skills examination scores, and provided reassurance that all students were receiving adequate training. Student performance on specific SP scenarios guide changes in the curriculum. Poor performance by students on the back pain station identified this topic as needing more formal instruction. Examination data also revealed that the students were not receiving experiences in counseling patients on HIV risk and in giving patients bad news.

SP-based Clinical Skills Examinations are used in Canada to test candidates for physician licensure.[6] Students from foreign medical schools are also required to complete successfully an SP Examination as part of the ECFMG certifying examination.[7] The availability of SP examinations attracts students from Asian medical schools to enroll in our International Medicine Externship programs. The National Board of Medical Examiners (NBME) plans to implement a SP Clinical Skills Examination as part of the licensure process for all U.S physicians.[8] JABSOM has been a pilot site for the NBME SP exam since 1994, and is currently represented on the NBME SP Test Materials Development Committee. This activity has contributed to the national recognition that our school has received in the area of innovations in medical education.

Summary

Standardized patients are volunteers from the community who participate actively in the teaching and evaluation of our future physicians. The SP program augments medical student learning in both clinical and basic sciences by providing opportunities to practice on patients who are available and willing to be examined. SPs allow "teachable moments" to be created, rather than waited for. SP-based examinations are the most reliable and standardized methods for performance-based assessment of bedside clinical skills. The problem-based-learning (PBL) approach to medical education at JABSOM is designed to foster self-directed learning, interpersonal skills and early hands-on clinical experiences. JABSOM SP experiences are integrated within the PBL curriculum. The CCS and SPs are now vital components of the JABSOM educational model.

References

1. Barrows HS, Abrahamson S, The Programmed Patient: A Technique for Appraising Student Performance in Clinical Neurology. J Med Ed, 1964;39:802-5.
2. Emerging trends in the Use of Standardized Patients, Contemporary Issues in Medical Education, Association of American Medical Colleges, May 1998;1(7).
3. Tamblyn RM, et al, The Accuracy of Standardized Patient Presentation, Med Educ, 1991;25:100-109.
4. De Champlain AF et al, Standardized Patients' Accuracy in Recording Examinee' Behaviors Using Checklists, Acad Med, 1997;72(10): 585-7.
5. Vu NV et al, Clinical performance-based Test Sensitivity and Specificity in Predicting First-year Residency Performance, Acad Med, 1993 Feb;68(2 Suppl):S41-5.
6. Reznick RK et al, Large-scale High-stakes Testing with an OSCE: Report from the Medical Council of Canada, Acad Med, 1996;71(1):S19-21.
7. Gary NE et al, Graduates of Foreign Medical Schools: Progression to Certification by the Educational Commission for Foreign Medical Graduates, Acad Med, 1997;72(1):17-22.
8. Klass D et al, Development of a performance-based Test of Clinical Skills for the United States Medical Licensing Examination, Federal Bulletin 1998, Vol 85, No 3, 177-185.



HAWAII POISON CENTER

OAHU: 941-4411

NEIGHBOR ISLANDS TOLL-FREE:

1-800-362-3585

Free Hotline 24 Hours a Day.

POISON CENTER TIPS

- Keep the number of the Hawaii Poison Center on or near your telephone.
- If you suspect a poisoning, do not wait for signs and symptoms to develop. Call the Hawaii Poison Center immediately.
- Always keep Ipecac Syrup in your home. (This is used to make a person vomit in certain types of poisoning.) **Do not use Ipecac Syrup unless advised by the Hawaii Poison Center.**
- Store all medicines, chemicals, and household products out of reach and out of sight, preferably locked up.
- A good rule to teach children is to "always ask first" before eating or drinking anything—don't touch, don't smell, don't taste.

Donate to help us save lives.

Mail checks, payable to:

Hawaii Poison Center

1319 Punahou Street, Honolulu, HI 96826

Cancer Research Center Hotline

Etiologic Research on Lung Cancer in Hawaii: The Roles of Smoking, Phytochemicals and Metabolic Genes

Loïc Le Marchand, M.D., Ph.D.
Professor, Cancer Etiology Program

Lung cancer is the most common malignancy worldwide and is the leading cause of cancer death in North America and in Hawaii. It is estimated that 90% of lung cancer deaths in the U.S. are caused by smoking. Risk has been shown to increase in relation to both smoking intensity and duration, and a person who smoked one pack per day for 30 years is estimated to have a lung cancer risk ten- to twenty-fold greater than that of a life-long non-smoker. Smoking cessation leads to a reduction in the risk of lung cancer, but not significantly before the fifth year and risk, possibly, never quite returns to the background level of a life-long non-smoker. The major increase in cigarette consumption starting in the 1910s has resulted in a sharp rise in lung cancer occurrence between the 1930s and 1980s. Rates in Hawaii have now peaked in males but are still increasing in females. Even though smoking rates have decreased, this disease will remain an important source of mortality in the future due to the large number of former smokers in our population. In the past fifty years, we have also seen a shift in the pathologic presentation of lung cancer in Hawaii, as in other parts of the US. The frequency of adenocarcinoma has markedly increased, whereas that of squamous cell carcinoma has proportionally decreased, presumably as a result of changes in cigarette composition and smoking behavior. Survival from lung cancer has remained extremely poor with a five-year survival rate of 12-15%.

Incidence rates for lung cancer show marked differences among ethnic groups in Hawaii, with the rates for Hawaiians and Caucasians being two- to three-fold higher than those for the Asian groups. The etiologic research undertaken on this malignancy at the Cancer Research Center of Hawaii has been aimed at elucidating these ethnic differences, with the goal of advancing our understanding of the disease. Because there seemed to be a poor correlation between lifelong smoking patterns and lung cancer incidence among the main ethnic groups in our population, efforts first focused on exploring other possible risk factors and, in particular, diet. Faculty of the Center's Epidemiology Program were among the first to report that intake of lipids may increase lung cancer risk and that a variety of constituents in fruits and vegetables may be protective.[1-3] At a time when most studies focused on beta-carotene only, we showed that additional carotenoids (especially, lutein and alpha-carotene) may decrease risk.[4] More recently, we also showed that certain flavonoids (quercetin in onions and apples, and naringin from grapefruit) may also be protective.[5] Because recent large clinical trials testing the ability of beta-carotene to prevent lung cancer have shown no beneficial effect (and even a detrimental effect in high risk smokers), the potential preventive effects of other plant constituents ("phytochemicals") are currently receiving renewed research interest.

The detailed information collected from a large number of patients in Hawaii allowed us to examine the relationship between smoking and lung cancer in the main ethnic groups. After taking into account patterns of smoking (intensity, duration, type of cigarettes, depth of inhalation, etc.), we found that the overall lung cancer risk associated with cigarette smoking was 120% greater for Hawaiians and 50% greater for Caucasians than for Japanese.[6] As a possible explanation for these differences, we turned our attention to the possibility that the ability to activate or detoxify carcinogens from tobacco smoke varies among ethnic groups. Many chemical carcinogens need first to be transformed into reactive intermediates that are capable of binding to DNA, potentially starting the carcinogenic process. Considerable variation exists among individuals in the activity of the enzymes responsible for the activation and detoxification of tobacco carcinogens (e.g., cytochrome P450 enzymes, glutathione-S-transferases). At least part of this variability is often due to minor inherited genetic variation [e.g., single nucleotide polymorphism (SNPs)] that affects the transcription of the gene or function of the protein. Thus, we have been investigating whether genetic variants in the genes coding for these enzymes occur with different frequencies among the ethnic groups, whether they can be shown to affect enzyme activity and whether they are associated with risk of lung cancer. We are also studying the effects of various dietary factors on these enzymatic pathways in relation to lung cancer risk.

For example, we recently showed that a polymorphism in the CYP1A1gene was directly associated with lung squamous cell carcinoma and that a polymorphism in the CYP2E1 gene was inversely associated with lung adenocarcinoma, pointing to different etiologies for these tumors.[7] We also showed that the frequencies of these polymorphisms vary markedly among ethnic groups and that they both result in a change in enzyme activity.[8,9] The inducibility of cytochrome P4501A1 (which bioactivates poylcyclic hydrocarbons) was found to be increased in subjects with the variant *CYP1A1* allele. The activity of cytochrome P4502E1 (capable of activating nitrosamines) was reduced for subjects with the *CYP2E1* variant allele. Examining the detailed dietary information collected on the subjects, we found that the protective effect of onion intake against lung cancer differed according to the *CYP1A1* genotype of the subjects, suggesting that the known inhibiting effect of the flavonoid quercetin (present in large quantities in onions) on CYP1A1 may be an important protective mechanism.[5] Studies using various biomarkers of exposure, genetic susceptibility and early biological effects have been initiated to confirm these relationships. In particular, we are currently recruiting smokers for feeding studies in which the effects of specific vegetables and fruits on carcinogen activation are being tested.

Other polymorphisms found to be associated with lung cancer in our population include variants in "metabolic genes" (glutathione-S-transferase, myeloperoxidase, NADPH-quinone-oxidoreductase, 8-oxoguanine glycosylase) and oncogenes (*H-ras*), suggesting a role for specific agents and/or mechanisms in the etiology of this disease. Hawaii's multiethnic population is a unique resource for such studies as the ethnic groups have retained different cancer risk patterns and different frequencies for many of these genetic poly-

morphisms. This allows for valuable comparisons and a gain in statistical power.

Each year, lung cancer kills about one million individuals worldwide, including about 400 in Hawaii. Avoidance of all tobacco smoking is a clear priority in preventing the disease and public health strategies have been largely successful in gradually changing smoking behaviors. However, additional approaches are needed for strongly addicted smokers who are unable to quit, and for ex-smokers since they remain for many years at significantly increased risk. Progress in our understanding of the biological processes involved in nicotine addiction and lung carcinogenesis is leading to the identification of genetic susceptibility markers for smoking and/or lung cancer, as well as markers of early disease. Such new markers might allow the identification of high risk individuals for specifically designed interventions. Moreover, a number of nutritional or pharmaceutical agents are known to block carcinogen activation, enhance detoxification or inhibit downstream carcinogenic events in experimental models. They may lead to nutritional or chemoprevention approaches that may be useful for the prevention of lung cancer and the many other malignancies that have been related to smoking. Our goal is to continue to contribute new knowledge in these areas. However, further tobacco control and improved cessation strategies are likely to remain the key component in the prevention of lung cancer.

This research was supported by grants from the National Cancer Institute (R01 CA55874, R01 CA85997, P01 CA33619, N01 CN67001) and the American Cancer Society (EDT-78).

References

1. Hinds MW, Kolonel LN, Lee J, Hankin JH. (1983) Dietary cholesterol and lung cancer risk among men in Hawaii. *Am J Clin Nutr* 37, 192-3.
2. Hinds MW, Kolonel LN, Hankin JH, Lee J. (1984) Dietary vitamin A, carotene, vitamin C and risk of lung cancer in Hawaii. *Am J Epidemiol* 119, 227-37.
3. Le Marchand L, Yoshizawa CN, Kolonel LN, Hankin JH, Goodman MT. (1989) Vegetable consumption and lung cancer risk: A population-based case-control study in Hawaii. *J Natl Cancer Inst* 81, 1158-64.
4. Le Marchand L, Hankin JH, Kolonel LN, Beecher GR, Zhao LP. (1993) Intake of specific carotenoids and lung cancer risk. *Cancer Epidemiol Biomarkers* Prev 2,183-187.
5. Le Marchand L, Murphy SP, Hankin JH, Wilkens LR, Kolonel LN. (2000) Flavonoid intake and lung cancer risk. *J Natl Cancer Inst* 92,154-60.
6. Le Marchand L, Wilkens LR, Kolonel LN. (1992) Ethnic differences in the lung cancer risk associated with smoking. *Cancer Epidemiol Biomarkers* Prev 1,103-7.
7. Le Marchand, L., Sivaraman, L., Pierce, L., Seifried, A., Lum, A., Wilkens, L.R., and Lau, A.F. (1998) Associations of CYP1A1, GSTM1, and CYP2E1 polymorphisms with lung cancer suggest cell type specificities to tobacco carcinogens. *Cancer Res* 58, 4858-63.
8. Le Marchand L, Wilkinson GR, Wilkens LR. Genetic and dietary predictors of CYP2E1 activity: a phenotyping study in Hawaii Japanese using chlorzoxazone. *Cancer Epidemiol Biomarkers Prev* 1999;8:495-500.
9. Nerurkar PV, Okinaka L, Aoki C, Seifried A, Lum-Jones A, Wilkens LR and Le Marchand L. CYP1A1, GSTM1 and GSTP1 genetic polymorphisms and urinary 1-hydroxypyrene excretion in non-occupationally exposed individuals. *Cancer Epidemiol Biomarkers Prev* 2000;9:1119-1122.

Mammograms...



Not just once, but for a lifetime

Medicare helps pay for yearly mammograms.

For Medicare information, call **1-800-638-6833.**
For information on breast cancer and mammograms, call the National Cancer Institute's Cancer Information Service at **1-800-4-CANCER (1-800-422-6237).**

Persons with TTY equipment, dial **1-800-332-8615.**

News and Notes Henry N. Yokoyama MD

Medical Tid Bits...

Women and Coronary Disease: Nanette K. Wenger MD, FACC Coronary heart disease is the largest single killer of American women: Here are some of the disturbing statistics:

a. Every two minutes a woman in the U.S. dies from coronary heart disease...
b. 44% of the women who have a heart attack die within a year...
c. 63% of women who die suddenly from coronary disease have not had previous coronary symptoms
d. Afro-American women have a higher mortality from cardiovascular disease than white women, with their death rates being as much as 67% higher.
e. A recent Gallup poll: 40% of U.S. women fear dying from breast cancer although only 4% actually die from breast cancer...At least one third of all American women will die of heart disease compared with one of every 27 who will die from breast cancer.

— — — — — — — —

Pregnant Pause: Doctors in Puerto Rico suggest that some cases of severe morning sickness may be due to Bacterium H. Pylori: 89% of pregnant women with intense nausea tested positive for H. Pylori.

— — — — — — — —

Annual Vacations: A study of 12,866 men at risk for cardiac problems shows that men who took annual vacations were 17% less likely to die over a 9 year period, than those who skipped vacations and 32% less likely to die of heart disease. (U of Pittsburgh Researchers and the State of University of New York).

— — — — — — — —

G.I. Bleeding: The combinations of SSRI's (e.g., Prozac, Zoloft, or Paxil) with aspirin, ibuprofen, and other non-steroidal anti-inflammatory drugs taken regularly may cause serious stomach bleeding.

— — — — — — — —

ACE that Cough! Irritating dry coughs are a common side effect of ACE inhibitors...a small study has found that 256 mg of iron daily improved the cough in 80% of cases.

— — — — — — — —

BAYCOL: The popular cholesterol lowering drug BAYCOL (Bayer) has been pulled off the market after being linked to 31 U.S. deaths. Reports of muscle destruction was about ten times as common with BAYCOL.

— — — — — — — —

Type II Diabetes Rx: In recent years, the U.S. has seen an alarming increase in Type II Diabetes Mellitus. A study released by the National Institute of Diabetes and Digestive and Kidney Diseases showed that lifestyle changes are more effective in preventing the condition than treatment with METFORMIN...

The 3,234 study participants (ages 25 to 85) showed that lifestyle changes—especially in those over age 60 had greater benefits and greatest in subjects who are physically active at least 30 minutes a day five times a week and who lost 5 to 7% of body weight or an average 15 pounds.

**Losing a few pounds and walking 30 minutes a day are goals well within the reach of everyone.

— — — — — — — —

EYE TO EYE... A government report shows that high doses of antioxidants can slow the progress of macular degeneration — the nation's leading cause of blindness (in more than 250,000 people with the condition). What to take? Vitamin C (500 mg); Vitamin E (400 I.U.); Beta Carotene (15 mg) q.d. plus Zinc (80 mg) daily.

— — — — — — — —

Unnecessary Appendectomies: Despite all the high tech diagnostic tools, viz CT scans, and laparoscopic exams, an inflamed appendix is difficult to diagnose. Each year 40,000 unnecessary appendectomies are performed because of the difficulty visualizing the appendix especially in women.

— — — — — — — —

Playing Chicken: The routine use of antibiotics in livestock create healthier and fatter animals, but the same antibiotics become resistant to bacteria found in our intestines making treatment difficult.

— — — — — — — —

How to Deal with Anxiety: With the anthrax scare and a war with no end in sight, a lot of people are feeling anxious these days. Here are some recommendations:

a. First try Yoga or hot baths—if it doesn't work and the anxiety persists for weeks, Richard Friedman, psychiatrist and director of the Psycho-Pharmacology clinic at New York Weill Cornell Medical Center in Manhattan recommends as follows:
b. Don't avoid the reaction, talk to your friends and family.
c. Try to relax—but no alcohol...try deep breathing, exercise, Yoga, or meditation...hot baths, and cups of herbal tea.
d. If the anxiety persists, see a professional who may prescribe Paxil (which takes weeks to work) or benzodiazepines, such as Valium, Xanax, Ativan, or Klonopin which work within minutes, not weeks.
e. If the anxiety is causing insomnia, then Halcion, Ambien, and Restoril can be used with caution.

— — — — — — — —

Breast Self Exam: Now comes word that breast self exam may not be so helpful...after reviewing eight major studies, a Canadian task force concluded that there is little evidence that the technique saves lives...Indeed the data seems to indicate that breast self exams do more harm and prompts unnecessary testing...Two of the studies were in China and Russia which do not have access to the most advanced diagnostic techniques.

Meanwhile there is a body of evidence that the best way to detect breast cancer is a mammogram and annual exam by a physician...The most important thing is to report unusual changes to your doctor.

— — — — — — — —

Walker Watch: The American Academy of Pediatrics feels that the 3 million walkers that American parents buy for their infants each year may do more harm than good. There is no evidence that the devices help infants learn to walk independently...On the contrary, pediatricians feel that the walkers delay normal motor development and cause serious injury and even death...

— — — — — — — —

Stressed Out: Researchers at London's Imperial College say that anxiety during pregnancy can double the risk of having a hyperactive child, possibly due to exposure to the stress hormone cortisol...

— — — — — — — —

Folic Acid: Two years after folic acid was added to many grain products in the U.S. certain birth defects of the brain and spine are down 19%. Enriched food provides a quarter of the 400 micrograms a day women of childbearing age need... The rest can come from supplements, hyperfortified cereals and leafy green vegetables.

— — — — — — — —

HIV/AIDS: The tab for treating and preventing HIV/AIDS in the world's poorest countries could run as high as $9.2 billion a year, according to the latest U.N. figures...Current expenditure: About $1.8 billion. About 4 billion is needed in sub-Saharan Africa where more than 20% of the adult population is infected.

— — — — — — — —

ECSTASY: The National Institute on Drug Abuse has evidence that the club drug Ecstasy triggers semipermanent memory loss and persistent behavioral changes even after casual use.

Fat Burner Pills: These supplements have become a multimillion dollar industry by promising to speed up metabolism and burn away fat. Thanks to a marketing blitz, these products have become a billion dollar industry. But there are few or any studies in the scientific literature showing that these supplements can accomplish this...What's distressing is that although they don't work, they are not risk free...

Most contain ephedra (a Chinese herb known as MAHUANG or ephedrine). The potential side effects include heart attacks, strokes, seizures, psychosis, and death. More dangerous still are variants containing combinations of ephedrine, caffeine, pseudoephedrine, and norepinephrine used with over the counter cold remedies...

— — — — — — — —

Baby Soy: Infants on soy bean formula grow up to be as healthy as the standard cow derived formula...The soy's high level of photoestrogen (which act like female sex hormones could affect development). Experts say breast milk is still the best...

— — — — — — — —

Oral Advice: A study investigating HIV transmission from oral sex shows no cases...Unprotected oral sex with infected partners is safer than anal or vaginal sex with condom...But protected oral sex is certainly safest...

— — — — — — — —

Out of Control: Almost one-third of the estimated 42 million Americans with high blood pressure don't know they have the condition. Worse, 70% have seen a physician only three times in the past year and 90% have insurance.

Potpourri...

Two men discussing a friend's ailment: "I heard Joe's laid up in bed with back pain. The doctor told him it's his "psychotic nerve."

"Yeah! I hear the pain gets so bad, it drives you crazy."

— — — — — — — —

Female patient to her GP: "Can you refer me to a groinnocologist?"

— — — — — — — —

Father on hearing the doctor's diagnosis of his child's condition: "I don't understand how he could have chicken pox. We had his annihilated when he was younger..."

— — — — — — — —

Woman to doctor: I have been feeling absolutely marvelous since starting these frolic acid tablets...

— — — — — — — —

Arthritis of the Penis:

My memories of the most demanding rotation of my residence training boils down to just a few events...Poor Mr. Smith had suffered a stroke the previous night. Although he was comatose his dutiful and caring wife was always at his side...

I tried to avoid invading one of Mr. Smith's few remaining orifices with a condom catheter in lieu of an indwelling catheter, but we didn't have a small enough condom catheter. The one we were using kept falling off...

In the most diplomatic manner, I explained: "Due to the inadequacy of the volume of penile tissue, we were unable to keep the catheter on...And therefore we lost track of the urinary output..."

Mrs. Smith pitched in, "Oh well, that's because he had arthritis of the penis..." I muttered to the nurse, "I bet that's what he told her when it was stiff in the mornings..."

Dr. Carolyn Lane

— — — — — — — —

A doctor answered the phone and heard the familiar voice of a colleague saying, "We need a fourth for poker..."

I'll be right over" the doctor answered...

As he was putting on his coat, his wife asked, "Is it serious?"

"Oh yes!" the doctor answered gravely, "In fact there are three doctors there already!!"

During a Papal visit to Cuba, the Pope was strolling along the beach with Fidel Castro when the wind suddenly blew His Holiness's hat into the ocean. Fidel retrieved it for Him by walking across the water...The next day the newspaper headlines in Cuba read: "Pope Declares Castro Successor to Jesus."

The Vatican issued the statement, "Pope Calls Hat Back with Divine Power" and the Miami paper declared, "Fidel Can't Even Swim!"

The Philippine Medical Association of Hawaii Research Award

PMAH offers cash prizes of $400 (first place) and $200 (second place) for scientific research about Hawaii Filipinos. The material must be presented (podium) at the March 2002 Quarterly Meeting of the Association, to be held on Oahu.

You are encouraged to submit abstracts describing original work about Hawaii Filipinos. The competition is open to physicians, medical students, nurses, therapists, pharmacists, students of social work and public health, and all other medical or paramedical professions. The author/s may be in practice or training. Material previously presented or published elsewhere is acceptable.

Contact the following for abstract submission forms:

Dr. Theresa Danao-Camara
PMAH CME
1212 Nuuanu St., 2405
Honolulu, HI 96817
Ph: 522-3863

Abstracts must be received by mail by January 31, 2002.

Selection will be performed by a committee of PMAH members based on originality, application to the Filipino population in Hawaii, and contribution to the medical literature. You will be notified by mail if your abstract has been selected for presentation by February 15, 2002.

Until There's a Cure,

There's the

American Diabetes

Association

Index to Hawaii Medical Journal Volume 60, 2001

Compiled by Carolyn S.H. Ching and Marlene M.A. Cuenco of the Hawaii Medical Library

Keyword Index

ACCREDITATION. The role of accreditation in medical education [Medical school hotline], 60(8):211
ACUPUNCTURE. Stroke and complementary medicine, 60(10):261
— Patient characteristics and satisfaction for members using acupuncture services, 60(11):291
AFRICA, WESTERN. Indigenous ways of healing guinea worm by the Sonninke culture in Mauritania, West Africa [Medical school hotline], 60(4):95
ALTERNATIVE MEDICINE. Editorial, 60(10):250
— Guest editorial, 60(10):254
— Integrative health and healing: "looking in" to "left out" medicine, 60(10):257
— Is there any evidence?, 60(10):259
— Integrative medicine approach to obesity and diabetes, 60(10):262
— Complementary and alternative healing in paradise: the state of the state, 60(10):264
— Special issue on alternative medicine - part II [Editorial], 60(11):278
— Integrative medicine: an academic discipline? [Special contribution], 60(11):280
— Energy fields in conventional and integrative medicine, 60(11):283
— emerging field of yoga therapy, 60(11):286
— use of pulsed electromagnetic fields (PEMF) in osteoarthritis (OA) of the knee preliminary report, 60(11):288
— Paola, 60(11):297
— [re: alternative medicine], 60(12):311
— [re: alternative medicine], 60(12):311
ANALGESIA. Box jellyfish (carybdea alata) in Waikiki: their influx cycle plus the analgesic effect of hot and cold packs on their stings to swimmers at the beach: a randomized, placebo-controlled, clinical trial, 60(4):100
ANALGESICS. Box jellyfish (carybdea alata) in Waikiki the analgesic effect of sting-aid, Adolph's meat tenderizer and fresh water on their stings: a double-blinded, randomized, placebo-controlled clinical trial, 60(8):205
ANTIBIOTICS. Out-patient parenteral antibiotic therapy (OPAT): clinical outcomes and adverse events, 60(2):31
ARTHRITIS. A 54-year old man with arthritis and diarrhea [Residents' case series], 60(6):158
ARTHRITIS, JUVENILE RHEUMATOID. Complementary medicine techniques to help reduce muscular pain in the pediatric rheumatic illnesses, 60(11):289
ARTHROPLASTY, REPLACEMENT, HIP. Fat embolism, ARDS, coma, death: the four horsemen of the fractured hip, 60(1):15
ATTITUDE OF HEALTH PERSONNEL. Barriers to good end-of-life care: a physician survey, 60(2):40
AWARDS AND PRIZES. Skin cancer prevention research receives national award [Cancer research center hotline], 60(5):128
BIOTERRORISM. Bioterrorism, the course we never had in medical school [Editorial], 60(12):308
BITES AND STINGS. Box jellyfish (carybdea alata) in Waikiki: their influx cycle plus the analgesic effect of hot and cold packs on their stings to swimmers at the beach: a randomized, placebo-controlled, clinical trial, 60(4):100
— Editorial, 60(8):202
— Box jellyfish (carybdea alata) in Waikiki the analgesic effect of sting-aid, Adolph's meat tenderizer and fresh water on their stings: a double-blinded, randomized, placebo-controlled clinical trial, 60(8):205
— Box jellyfish in Waikiki [Letter to the editor], 60(11):278
BOOK REVIEWS. Medicine in quotations: views of health and disease through the ages [Book review], 60(2):28
— Meditation as medicine [Book review], 60(11):279
BREAST NEOPLASMS. Giant multiple intraductal papilloma of the breasts: a case report and review of the literature [Case of the month], 60(3):60
— Researching nutrition and breast cancer [Cancer research center hotline], 60(10):267
CANCER RESEARCH CENTER OF HAWAII. Cancer research center of Hawaii: 30 years of progress in cancer research [Cancer research center hotline], 60(8):213
CASE REPORT. Giant multiple intraductal papilloma of the breasts: a case report and review of the literature [Case of the month], 60(3):60
— Case report: pseudo pseudothrombocytopenia, 60(4):108
CASE-CONTROL STUDIES. Local studies address a previously hidden sexually transmitted disease: human papillomavirus and cervical neoplasia [Cancer research center hotline], 60(9):236
CEREBROVASCULAR ACCIDENT. Stroke and complementary medicine, 60(10):261
CERVIX NEOPLASMS. Local studies address a previously hidden sexually transmitted disease: human papillomavirus and cervical neoplasia [Cancer research center hotline], 60(9):236
CHILD. Complementary medicine techniques to help reduce muscular pain in the pediatric rheumatic illnesses, 60(11):289
— A 14-year-old girl with refractory seizures [Residents' case series], 60(12):321
CHRON DISEASE. A 54-year old man with arthritis and diarrhea [Residents' case series], 60(6):158
CLINICAL CLERKSHIP. The role of teaching the doctor-patient relationship in medical education [Medical school hotline], 60(6):160
CLINICAL COMPETENCE. Teaching cultural competency [Medical school hotline], 60(7):187
CLINICAL TRIALS. Availability of clinical trials for Hawaii cancer patients [Cancer research center hotline], 60(6):161
CLOWARD, RALPH B. A tribute to Ralph Cloward MD [Commentary], 60(1):4
CONFLICT (PSYCHOLOGY).

Ho'oponopono, 60(11):297
CONGRESSES. Guest editor, 60(10):253
— Guest editorial, 60(10):254
— Notes from the HMA 145th annual meeting, 60(12):308
COVER ILLUSTRATIONS. Opihi, 60(1):3
— Wa'a humu, 60(2):27
— Kuhi no ka lima, hele no ka maka, 60(3):55
— Laukia, 60(4):83
— Ilio, 60(5):121
— Pele and lehua, 60(6):145
— Halau wa'a, 60(7):173
— Aku boat, 60(8):201
— Ahi, 60(9):225
— Heihei kukini, 60(10):249
— E lanalana e, 60(11):277
— Ulu from Kanehunamoku, 60(12):307
CULTURAL CHARACTERISTICS. Teaching cultural competency [Medical school hotline], 60(7):187
CULTURAL COMPETENCY. Guest editorial, 60(11):293
CULTURAL DIVERSITY. Quality of life research in Hawaii's cancer survivors [Cancer research center hotline], 60(7):189
CULTURE. Guest editorial, 60(11):293
DECISION MAKING. Integrative health and healing: "looking in" to "left out" medicine, 60(10):257
DIARRHEA. A 54-year old man with arthritis and diarrhea [Residents' case series], 60(6):158
DIET. Integrative medicine approach to obesity and diabetes, 60(10):262
— Researching nutrition and breast cancer [Cancer research center hotline], 60(10):267
— Kaho'olawe: traditional Hawaiian diet (THD) and health, 60(11):298
DIET THERAPY. The Hawaii diet: ad libitum high carbohydrate, low-fat multi-cultural diet for the reduction of chronic disease risk factors: obesity, hypertension, hypercholesterolemia, and hyperglycemia, 60(3):69
— Stroke and complementary medicine, 60(10):261
DIET, FAT-RESTRICTED. The Hawaii diet: ad libitum high carbohydrate, low-fat multi-cultural diet for the reduction of chronic disease risk factors: obesity, hypertension, hypercholesterolemia, and hyperglycemia, 60(3):69
DISABLED CHILDREN. Childhood disabilities in medical education at the John A. Burns School of Medicine (JABSOM) [Medical school hotline], 60(1):5
DISEASE OUTBREAKS. Clinical and epidemiological observations regarding the 1998 Kauai murine typhus outbreak, 60(1):7
DISEASE VECTORS. Of mice and mongooses ... a history of leptospirosis research in Hawaii, 60(7):179
DISEASES. The impact of disease on Hawaii's history, 60(11):295
— [re: diseases in Hawaii], 60(12):311
DRACUNCULUS. Indigenous ways of healing guinea worm by the Sonninke culture in Mauritania, West Africa [Medical school hotline], 60(4):95
DRUG INTERACTIONS. Ginko, vioxx and excessive bleeding - possible drug-herb interactions: case report, 60(11):290
DRUG TOXICITY. A 14-year-old girl with refractory seizures [Residents' case series], 60(12):321
EDITORIALS. Kauai murine typhus [Editorial], 60(1):4
— four horsemen of the fractured hip [Editorial], 60(1):4
— tribute to Ralph Cloward MD [Commentary], 60(1):4
— Editorial February 2001, 60(2):28
— Editorial, 60(3):56
— Editorial - April 2001, 60(4):84
— A.A. "Bud" Smyser Dec. 18, 1920 - Mar. 19, 2001, 60(4):85
— Watch the wasabe! severe palmer hyperhidrosis by transthoracic endoscopic sympathectomy [Editorial], 60(5):122
— Hepatitis C, diagnosis and management [Editorial], 60(6):146
— Editorial, 60(7):174
— Editorial, 60(8):202
— Today's health crisis: a laughing matter [Commentary], 60(8):202
— Happy birthday, Hawaii Medical Journal [Editorial], 60(9):226
— Editorial, 60(10):250
— Medical journals and advertisers it's a great team and we will continue to play the game, 60(10):250
— Guest editor, 60(10):253
— Guest editorial, 60(10):254
— Special issue on alternative medicine - part II [Editorial], 60(11):278
— Guest editorial, 60(11):281
— Guest editorial, 60(11):293
— Bioterrorism, the course we never had in medical school [Editorial], 60(12):308
— Editorial, HMJ vol.1, no.1, 1941 [classical article], 60(9):226
EDUCATION, MEDICAL. Childhood disabilities in medical education at the John A. Burns School of Medicine (JABSOM) [Medical school hotline], 60(1):5
— role of psychiatry in undergraduate medical education at the John A. Burns School of Medicine (JABSOM) [Medical school hotline], 60(2):29
— art of medicine [Medical school hotline], 60(10):266
— Role of standardized patients in medical education [Medical school hotline], 60(12):323
— Teaching cultural competency [Medical school hotline], 60(7):187
EDUCATION, MEDICAL, CONTINUING. Medical education fellowship in the Office of Medical Education at the John A. Burns School of Medicine [Medical school hotline], 60(9):234
ELECTROMAGNETIC FIELDS. Energy fields in conventional and integrative medicine, 60(11):283
— use of pulsed electromagnetic fields (PEMF) in osteoarthritis (OA) of the knee preliminary report, 60(11):288
EMBOLISM, FAT. Fat embolism, ARDS, coma, death: the four horsemen of the fractured hip, 60(1):15
EMPATHY. Random tulips [Letter to the editor], 60(3):56
— Compassion in medicine [Medical school hotline], 60(3):58
— Dignity in medicine [Commentary], 60(6):146
— art of medicine [Medical school hotline], 60(10):266
EPIDEMIOLOGY. Major new grant in cancer epidemiology [Cancer research center hotline], 60(3):74
ETHICS, MEDICAL. DNR orders in the OR, 60(3):64
ETIOLOGY. Etiologic research on lung cancer in Hawaii: the roles of smoking, phytochemicals and metabolic genes [Cancer research center hotline], 60(12):325
FAMILY PRACTICE. The role of teaching the doctor-patient relationship in medical education [Medical school hotline], 60(6):160
FELLOWSHIPS AND SCHOLARSHIPS. The geriatric medicine fellowship program at the John A. Burns School of Medicine, University of Hawaii [Medical school hotline], 60(5):122
— Medical education fellowship in the Office of Medical Education at the John A. Burns School of Medicine [Medical school hotline], 60(9):234
FIBROMATOSIS, AGGRESSIVE. Surgical extirpation of a chest wall desmoid tu-

mor: a case report [Case of the month], 60(6):156
GANGLIONECTOMY. Improvement in quality of life after bilateral transthoracic endoscopic sympathectomy for palmar hyperhydrosis, 60(5):126
GENETICS. Etiologic research on lung cancer in Hawaii: the roles of smoking, phytochemicals and metabolic genes [Cancer research center hotline], 60(12):325
GERIATRICS. The geriatric medicine fellowship program at the John A. Burns School of Medicine, University of Hawaii [Medical school hotline], 60(5):122
GINGKO BILOBA. Ginko, vioxx and excessive bleeding - possible drug-herb interactions: case report, 60(11):290
HAWAII. Substance abuse and dependence in a public hospital: Hawaii, 60(2):35
— DNR orders in the OR, 60(3):64
— Hawaii diet: ad libitum high carbohydrate, low-fat multi-cultural diet for the reduction of chronic disease risk factors: obesity, hypertension, hypercholesterolemia, and hyperglycemia, 60(3):69
— Box jellyfish (carybdea alata) in Waikiki: their influx cycle plus the analgesic effect of hot and cold packs on their stings to swimmers at the beach: a randomized, placebo-controlled, clinical trial, 60(4):100
— Hepatitis C, diagnosis and management: a survey of practicing physicians in Hawaii, 60(6):148
— Availability of clinical trials for Hawaii cancer patients [Cancer research center hotline], 60(6):161
— Of mice and mongooses ... a history of leptospirosis research in Hawaii, 60(7):179
— Teaching cultural competency [Medical school hotline], 60(7):187
— Quality of life research in Hawaii's cancer survivors [Cancer research center hotline], 60(7):189
— Editorial, 60(8):202
— Box jellyfish (carybdea alata) in Waikiki the analgesic effect of sting-aid, Adolph's meat tenderizer and fresh water on their stings: a double-blinded, randomized, placebo-controlled clinical trial, 60(8):205
— Complementary and alternative healing in paradise: the state of the state, 60(10):264
— impact of disease on Hawaii's history, 60(11):295
— Ho'oponopono, 60(11):297
— Paola, 60(11):297
— [re: diseases in Hawaii], 60(12):311
— Organ procurement 1999-2000: how is Hawaii doing?, 60(12):314
— systematic approach to provider based disability management, 60(12):318
— Etiologic research on lung cancer in Hawaii: the roles of smoking, phytochemicals and metabolic genes [Cancer research center hotline], 60(12):325
HAWAII MEDICAL ASSOCIATION. Notes from the HMA 145th annual meeting, 60(12):308
HAWAII MEDICAL JOURNAL. Happy birthday, Hawaii Medical Journal [Editorial], 60(9):226
— Editorial, HMJ vol.1, no.1, 1941 [classical article], 60(9):226
— Index to the Hawaii Medical Journal, volume 60, 2001, 60(12):329
HAWAII STATE CONSORTIUM FOR INTEGRATIVE HEALTH CARE. Guest editorial, 60(10):254
— Guest editorial, 60(11):281
HAWAII STATE HOSPITAL. Substance abuse and dependence in a public hospital: Hawaii, 60(2):35
— Kulia Program: psychiatric rehabilitation in Hawaii, 60(9):229
HEALTH BEHAVIOR. Stroke and complementary medicine, 60(10):261
HEALTH EDUCATION. Skin cancer prevention research receives national award [Cancer research center hotline], 60(5):128
HEALTH SERVICES ACCESSIBILITY. Barriers to good end-of-life care: a physician survey, 60(2):40
— Availability of clinical trials for Hawaii cancer patients [Cancer research center hotline], 60(6):161
HEART TRANSPLANTATION. Are heart transplant recipients receiving cellular memories from their donated organ? A heuristic study, 60(11):282
HEPATITIS C. Hepatitis C, diagnosis and management: a survey of practicing physicians in Hawaii, 60(6):148
HEPATITIS C, CHRONIC. Chronic Hepatitis C caused by a virus - fiction or for real?, 60(6):155
HEPATITIS C-LIKE VIRUSES. Chronic Hepatitis C caused by a virus - fiction or for real?, 60(6):155
HIP FRACTURES. Fat embolism, ARDS, coma, death: the four horsemen of the fractured hip, 60(1):15
HISTORY. The impact of disease on Hawaii's history, 60(11):295
HISTORY OF MEDICINE. Of mice and mongooses ... a history of leptospirosis research in Hawaii, 60(7):179
— Cancer research center of Hawaii: 30 years of progress in cancer research [Cancer research center hotline], 60(8):213
HOME INFUSION THERAPY. Out-patient parenteral antibiotic therapy (OPAT): clinical outcomes and adverse events, 60(2):31
HOSPICES. Hawaii's world by A.A. Smyser. 2000 [classical article], 60(4):86
HOSPITALS, PUBLIC. Substance abuse and dependence in a public hospital: Hawaii, 60(2):35
HYPERCHOLESTEROLEMIA. The Hawaii diet: ad libitum high carbohydrate, low-fat multi-cultural diet for the reduction of chronic disease risk factors: obesity, hypertension, hypercholesterolemia, and hyperglycemia, 60(3):69
HYPERGLYCEMIA. The Hawaii diet: ad libitum high carbohydrate, low fat multicultural diet for the reduction of chronic disease risk factors: obesity, hypertension, hypercholesterolemia, and hyperglycemia, 60(3):69
HYPERHIDROSIS. Watch the wasabe! severe palmer hyperhidrosis by transthoracic endoscopic sympathectomy [Editorial], 60(5):122
— Improvement in quality of life after bilateral transthoracic endoscopic sympathectomy for palmar hyperhydrosis, 60(5):126
HYPERTENSION. The Hawaii diet: ad libitum high carbohydrate, low fat multi-cultural diet for the reduction of chronic disease risk factors: obesity, hypertension, hypercholesterolemia, and hyperglycemia, 60(3):69
INDEXES. Index to the Hawaii Medical Journal, volume 60, 2001, 60(12):329
INFORMATION SERVICES. Your link to cancer information: the Cancer Information Service Center [Cancer research center hotline], 60(4):109
INFUSIONS, PARENTERAL. Out-patient parenteral antibiotic therapy (OPAT): clinical outcomes and adverse events, 60(2):31
ISONIAZID. A 14-year-old girl with refractory seizures [Residents' case series], 60(12):321
JELLYFISH. Box jellyfish (carybdea alata) in Waikiki: their influx cycle plus the analgesic effect of hot and cold packs on their stings to swimmers at the beach: a randomized, placebo-controlled, clinical trial, 60(4):100
— Editorial, 60(8):202
— Box jellyfish (carybdea alata) in Waikiki the analgesic effect of sting-aid, Adolph's

meat tenderizer and fresh water on their stings: a double-blinded, randomized, placebo-controlled clinical trial, 60(8):205
— Box jellyfish in Waikiki [Letter to the editor], 60(11):278
JOB SATISFACTION. Today's health crisis: a laughing matter [Commentary], 60(8):202
JOHN A. BURNS SCHOOL OF MEDICINE. Childhood disabilities in medical education at the John A. Burns School of Medicine (JABSOM) [Medical school hotline], 60(1):5
— role of psychiatry in undergraduate medical education at the John A. Burns School of Medicine (JABSOM) [Medical school hotline], 60(2):29
— Compassion in medicine [Medical school hotline], 60(3):58
— geriatric medicine fellowship program at the John A. Burns School of Medicine, University of Hawaii [Medical school hotline], 60(5):122
— role of teaching the doctor-patient relationship in medical education [Medical school hotline], 60(6):160
— Teaching cultural competency [Medical school hotline], 60(7):187
— role of accreditation in medical education [Medical school hotline], 60(8):211
— Medical education fellowship in the Office of Medical Education at the John A. Burns School of Medicine [Medical school hotline], 60(9):234
— art of medicine [Medical school hotline], 60(10):266
— Integrative medicine: an academic discipline? [Special contribution], 60(11):280
— Student profile: class of 2005 John A. Burns School of Medicine (JABSOM) [Medical school hotline], 60(11):299
— Role of standardized patients in medical education [Medical school hotline], 60(12):323
JOURNALISM, MEDICAL. Chronic Hepatitis C caused by a virus - fiction or for real?, 60(6):155
JOURNALS, MEDICAL. Medical journals and advertisers it's a great team and we will continue to play the game, 60(10):250
JURISPRUDENCE. A defense prospective, 60(4):84
— claimant's view of the medical claim conciliation panel, 60(4):84
KAUAI. Clinical and epidemiological observations regarding the 1998 Kauai murine typhus outbreak, 60(1):7
KULIA I KA NU'U PROGRAM. The Kulia Program: psychiatric rehabilitation in Hawaii, 60(9):229
LACTONES. Ginko, vioxx and excessive bleeding - possible drug-herb interactions: case report, 60(11):290
LEGISLATION, MEDICAL. A defense prospective, 60(4):84
— claimant's view of the medical claim conciliation panel, 60(4):84
LEPTOSPIROSIS. Of mice and mongooses ... a history of leptospirosis research in Hawaii, 60(7):179
LETTERS TO THE EDITOR. Random tulips [Letter to the editor], 60(3):56
— Box jellyfish in Waikiki [Letter to the editor], 60(11):278
— Letters to the editor, 60(12):311
— [re: alternative medicine], 60(12):311
— [re: alternative medicine], 60(12):311
— [re: diseases in Hawaii], 60(12):311
LOW BACK PAIN. Chronic low back pain disability a modern-day epidemic (doctoral research proposal), 60(11):284
LUNG NEOPLASMS. Etiologic research on lung cancer in Hawaii: the roles of smoking, phytochemicals and metabolic genes [Cancer research center hotline], 60(12):325
MAGNETICS. Energy fields in conventional and integrative medicine, 60(11):283
MASSAGE. Complementary medicine techniques to help reduce muscular pain in the pediatric rheumatic illnesses, 60(11):289
MEDICINE, TRADITIONAL. Indigenous ways of healing guinea worm by the Sonninke culture in Mauritania, West Africa [Medical school hotline], 60(4):95
MEDITATION. Meditation as medicine [Book review], 60(11):279
MEMORY. Are heart transplant recipients receiving cellular memories from their donated organ? A heuristic study, 60(11):282
MENTAL DISORDERS. The Kulia Program: psychiatric rehabilitation in Hawaii, 60(9):229
MENTAL HEALING. On a wish and a prayer: healing through distant intentionality, 60(10):255
MENTAL HEALTH SERVICES. The Kulia Program: psychiatric rehabilitation in Hawaii, 60(9):229
MYOFASCIAL PAIN SYNDROMES. Complementary medicine techniques to help reduce muscular pain in the pediatric rheumatic illnesses, 60(11):289
NATIVE HAWAIIANS. Guest editorial, 60(11):293
— Kaho'olawe: traditional Hawaiian diet (THD) and health, 60(11):298
NEOPLASM RECCURRENCE, LOCAL. Surgical extirpation of a chest wall desmoid tumor: a case report [Case of the month], 60(6):156
NEOPLASMS. Major new grant in cancer epidemiology [Cancer research center hotline], 60(3):74
— Your link to cancer information: the Cancer Information Service Center [Cancer research center hotline], 60(4):109
— Availability of clinical trials for Hawaii cancer patients [Cancer research center hotline], 60(6):161
— Quality of life research in Hawaii's cancer survivors [Cancer research center hotline], 60(7):189
— Cancer research center of Hawaii: 30 years of progress in cancer research [Cancer research center hotline], 60(8):213
NURSE-PATIENT RELATIONS. Today's health crisis: a laughing matter [Commentary], 60(8):202
NURSES. Today's health crisis: a laughing matter [Commentary], 60(8):202
NUTRITION. Researching nutrition and breast cancer [Cancer research center hotline], 60(10):267
— Kaho'olawe: traditional Hawaiian diet (THD) and health, 60(11):298
OBESITY. The Hawaii diet: ad libitum high carbohydrate, low fat multi-cultural diet for the reduction of chronic disease risk factors: obesity, hypertension, hypercholesterolemia, and hyperglycemia, 60(3):69
— Integrative medicine approach to obesity and diabetes, 60(10):262
OPERATING ROOMS. DNR orders in the OR, 60(3):64
ORGAN PROCUREMENT. Organ procurement 1999-2000: how is Hawaii doing?, 60(12):314
OSTEOARTHRITIS. The use of pulsed electromagnetic fields (PEMF) in osteoarthritis (OA) of the knee preliminary report, 60(11):288
PAIN. Paola, 60(11):297
PAPILLOMA, INTRADUCTAL. Giant multiple intraductal papilloma of the breasts: a case report and review of the literature [Case of the month], 60(3):60
PAPILLOMAVIRUS, HUMAN. Local studies address a previously hidden sexually transmitted disease: human papillomavirus and cervical neoplasia [Cancer research center hotline], 60(9):236

PATIENT SATISFACTION. Patient characteristics and satisfaction for members using acupuncture services, 60(11):291
PATIENT SIMULATION. Role of standardized patients in medical education [Medical school hotline], 60(12):323
PHYSICIAN'S PRACTICE PATTERNS. Hepatitis C, diagnosis and management: a survey of practicing physicians in Hawaii, 60(6):148
PHYSICIAN-PATIENT RELATIONS. Compassion in medicine [Medical school hotline], 60(3):58
— role of teaching the doctor-patient relationship in medical education [Medical school hotline], 60(6):160
— art of medicine [Medical school hotline], 60(10):266
PLATELET FUNCTION TESTS. Case report: pseudo pseudothrombocytopenia, 60(4):108
PRACTICE GUIDELINES. DNR orders in the OR, 60(3):64
PRIMARY PREVENTION. Skin cancer prevention research receives national award [Cancer research center hotline], 60(5):128
PROBLEM SOLVING. Ho'oponopono, 60(11):297
PROFESSIONAL-PATIENT RELATIONS. Dignity in medicine [Commentary], 60(6):146
PSYCHIATRY. The role of psychiatry in undergraduate medical education at the John A. Burns School of Medicine (JABSOM) [Medical school hotline], 60(2):29
PSYCHOLOGY. Chronic low back pain disability a modern-day epidemic (doctoral research proposal), 60(11):284
QUALITY OF LIFE. Improvement in quality of life after bilateral transthoracic endoscopic sympathectomy for palmar hyperhydrosis, 60(5):126
— Quality of life research in Hawaii's cancer survivors [Cancer research center hotline], 60(7):189
REHABILITATION. The Kulia Program: psychiatric rehabilitation in Hawaii, 60(9):229
RELAXATION TECHNIQUES. Complementary medicine techniques to help reduce muscular pain in the pediatric rheumatic illnesses, 60(11):289
RELIGION AND MEDICINE. On a wish and a prayer: healing through distant intentionality, 60(10):255
RESEARCH. Your link to cancer information: the Cancer Information Service Center [Cancer research center hotline], 60(4):109
— Of mice and mongooses ... a history of leptospirosis research in Hawaii, 60(7):179
— Cancer research center of Hawaii: 30 years of progress in cancer research [Cancer research center hotline], 60(8):213
— Is there any evidence?, 60(10):259
— Chronic low back pain disability a modern-day epidemic (doctoral research proposal), 60(11):284
— Integrative medicine: an academic discipline? [Special contribution], 60(11):280
RESEARCH SUPPORT. Major new grant in cancer epidemiology [Cancer research center hotline], 60(3):74
RESUSCITATION ORDERS. DNR orders in the OR, 60(3):64
RISK. Researching nutrition and breast cancer [Cancer research center hotline], 60(10):267
SCHOOLS, MEDICAL. The role of accreditation in medical education [Medical school hotline], 60(8):211
SEIZURES. A 14-year-old girl with refractory seizures [Residents' case series], 60(12):321
SKIN NEOPLASMS. Skin cancer prevention research receives national award [Cancer research center hotline], 60(5):128
SMOKING. Etiologic research on lung cancer in Hawaii: the roles of smoking, phytochemicals and metabolic genes [Cancer research center hotline], 60(12):325
SMYSER, A.A. A.A. "Bud" Smyser Dec. 18, 1920 - Mar. 19, 2001, 60(4):85
STRAUB FOUNDATION. Guest editor, 60(10):253
STUDENTS, MEDICAL. Compassion in medicine [Medical school hotline], 60(3):58
— Student profile: class of 2005 John A. Burns School of Medicine (JABSOM) [Medical school hotline], 60(11):299
SUBSTANCE-RELATED DISORDERS. Substance abuse and dependence in a public hospital: Hawaii, 60(2):35
SUICIDE, ASSISTED. Hawaii's world by A.A. Smyser. 2000 [classical article], 60(4):86
TERMINAL CARE. Barriers to good end-of-life care: a physician survey, 60(2):40
— Hawaii's world by A.A. Smyser. 2000 [classical article], 60(4):86
THORACIC NEOPLASMS. Surgical extirpation of a chest wall desmoid tumor: a case report [Case of the month], 60(6):156
THORACOSCOPY. Improvement in quality of life after bilateral transthoracic endoscopic sympathectomy for palmar hyperhydrosis, 60(5):126
THROMBOCYTOPENIA. Case report: pseudo pseudothrombocytopenia, 60(4):108
TISSUE DONORS. Organ procurement 1999-2000: how is Hawaii doing?, 60(12):314
TREATMENT OUTCOME. Box jellyfish (carybdea alata) in Waikiki: their influx cycle plus the analgesic effect of hot and cold packs on their stings to swimmers at the beach: a randomized, placebo-controlled, clinical trial, 60(4):100
— Box jellyfish (carybdea alata) in Waikiki the analgesic effect of sting-aid, Adolph's meat tenderizer and fresh water on their stings: a double-blinded, randomized, placebo-controlled clinical trial, 60(8):205
TYPHUS, ENDEMIC FLEA-BORNE. Clinical and epidemiological observations regarding the 1998 Kauai murine typhus outbreak, 60(1):7
WIT AND HUMOR. Today's health crisis: a laughing matter [Commentary], 60(8):202
WORKERS' COMPENSATION. A systematic approach to provider based disability management, 60(12):318
YOGA. The emerging field of yoga therapy, 60(11):286

Author Index

AH SAM A. Childhood disabilities in medical education at the John A. Burns School of Medicine (JABSOM) [Medical school hotline], 60(1):5
ANSDELL VE. Of mice and mongooses .. a history of leptospirosis research in Hawaii, 60(7):179
AOKI B. 14-year-old girl with refractory seizures [Residents' case series], 60(12):321
ARNOLD HL JR. Editorial, HMJ vol.1, no.1, 1941 [classical article], 60(9):226
BAKER FM. Substance abuse and dependence in a public hospital: Hawaii, 60(2):35
— Kulia Program: psychiatric rehabilitation in Hawaii, 60(9):229
BAUMAN KA. role of teaching the doctor-patient relationship in medical education [Medical school hotline], 60(6):160
BECKHAM S. Hawaii diet: ad libitum high carbohydrate, low-fat multi-cultural diet for the reduction of chronic disease risk factors: obesity, hypertension, hypercholesterolemia, and hyperglycemia, 60(3):69
BERMAN SJ. Out-patient parenteral antibi-

otic therapy (OPAT): clinical outcomes and adverse events, 60(2):31
BLAISDELL RK. impact of disease on Hawaii's history, 60(11):295
— [re: diseases in Hawaii], 60(12):311
BLANCHETTE PL. geriatric medicine fellowship program at the John A. Burns School of Medicine, University of Hawaii [Medical school hotline], 60(5):122
BRAUN KL. Barriers to good end-of-life care: a physician survey, 60(2):40
BROWN AC. Hawaii diet: ad libitum high carbohydrate, low-fat multi-cultural diet for the reduction of chronic disease risk factors: obesity, hypertension, hypercholesterolemia, and hyperglycemia, 60(3):69
BRUNO PB. Clinical and epidemiological observations regarding the 1998 Kauai murine typhus outbreak, 60(1):7
BURKE E. defense prospective, 60(4):84
BURKE J. Stroke and complementary medicine, 60(10):261
BURNETT T. Dignity in medicine [Commentary], 60(6):146
BUXMAN K. Today's health crisis: a laughing matter [Commentary], 60(8):202
CARROLL C. Organ procurement 1999-2000: how is Hawaii doing?, 60(12):314
CASHMAN TM. Hepatitis C, diagnosis and management: a survey of practicing physicians in Hawaii, 60(6):148
CHALAIRE D. Medicine in quotations: views of health and disease through the ages [Book review], 60(2):28
CHANDLER K. emerging field of yoga therapy, 60(11):286
CHING CSH. Index to the Hawaii Medical Journal, volume 60, 2001, 60(12):329
CHUN M. Paola, 60(11):297
CHUNG RS. Patient characteristics and satisfaction for members using acupuncture services, 60(11):291
COHAN ML. [re: alternative medicine], 60(12):311
CUENCO MMA. Index to the Hawaii Medical Journal, volume 60, 2001, 60(12):329
DANAO T. Guest editorial, 60(11):281
DANAO-CAMARA T. use of pulsed electromagnetic fields (PEMF) in osteoarthritis (OA) of the knee preliminary report, 60(11):288
DANG CR. Improvement in quality of life after bilateral transthoracic endoscopic sympathectomy for palmar hyperhydrosis, 60(5):126
DEMESA C. Meditation as medicine [Book review], 60(11):279
EFFLER PV. Hepatitis C, diagnosis and management: a survey of practicing physicians in Hawaii, 60(6):148
EKLOF B. Guest editor, 60(10):253
ELM JL. Hepatitis C, diagnosis and management: a survey of practicing physicians in Hawaii, 60(6):148
ELPERN DJ. Random tulips [Letter to the editor], 60(3):56
FRIED LR JR. claimant's view of the medical claim conciliation panel, 60(4):84
GALANIS DJ. Box jellyfish (carybdea alata) in Waikiki: their influx cycle plus the analgesic effect of hot and cold packs on their stings to swimmers at the beach: a randomized, placebo-controlled, clinical trial, 60(4):100
— Box jellyfish (carybdea alata) in Waikiki the analgesic effect of sting-aid, Adolph's meat tenderizer and fresh water on their stings: a double-blinded, randomized, placebo-controlled clinical trial, 60(8):205
GANAL-IHORI C. 54-year old man with arthritis and diarrhea [Residents' case series], 60(6):158
GLANZ K. Skin cancer prevention research receives national award [Cancer research center hotline], 60(5):128
GOLDSTEIN N. Kauai murine typhus [Editorial], 60(1):4
— four horsemen of the fractured hip [Editorial], 60(1):4
— Editorial February 2001, 60(2):28
— Editorial, 60(3):56
— Editorial - April 2001, 60(4):84
— A.A. "Bud" Smyser Dec. 18, 1920 - Mar. 19, 2001, 60(4):85
— Watch the wasabe! severe palmer hyperhidrosis by transthoracic endoscopic sympathectomy [Editorial], 60(5):122
— Hepatitis C, diagnosis and management [Editorial], 60(6):146
— Editorial, 60(7):174
— Editorial, 60(8):202
— Happy birthday, Hawaii Medical Journal [Editorial], 60(9):226
— Editorial, 60(10):250
— Medical journals and advertisers it's a great team and we will continue to play the game, 60(10):250
— Special issue on alternative medicine - part II [Editorial], 60(11):278
— Bioterrorism, the course we never had in medical school [Editorial], 60(12):308
GOODMAN MT. Local studies address a previously hidden sexually transmitted disease: human papillomavirus and cervical neoplasia [Cancer research center hotline], 60(9):236
GOTAY CC. Quality of life research in Hawaii's cancer survivors [Cancer research center hotline], 60(7):189
GOTO RS. Box jellyfish (carybdea alata) in Waikiki: their influx cycle plus the analgesic effect of hot and cold packs on their stings to swimmers at the beach: a randomized, placebo-controlled, clinical trial, 60(4):100
— Box jellyfish (carybdea alata) in Waikiki the analgesic effect of sting-aid, Adolph's meat tenderizer and fresh water on their stings: a double-blinded, randomized, placebo-controlled clinical trial, 60(8):205
GREATOREX P. Giant multiple intraductal papilloma of the breasts: a case report and review of the literature [Case of the month], 60(3):60
GREENE G. role of teaching the doctor-patient relationship in medical education [Medical school hotline], 60(6):160
GUERRERO APS. role of psychiatry in undergraduate medical education at the John A. Burns School of Medicine (JABSOM) [Medical school hotline], 60(2):29
HANING WF III. Substance abuse and dependence in a public hospital: Hawaii, 60(2):35
HICKMAN MS. Indigenous ways of healing guinea worm by the Sonninke culture in Mauritania, West Africa [Medical school hotline], 60(4):95
HIGASHIGAWA KH. Organ procurement 1999-2000: how is Hawaii doing?, 60(12):314
HIROKAWA RG. Chronic low back pain disability a modern-day epidemic (doctoral research proposal), 60(11):284
HOFFMAN T. Ginko, vioxx and excessive bleeding - possible drug-herb interactions: case report, 60(11):290
HUGHES CK. Kaho'olawe: traditional Hawaiian diet (THD) and health, 60(11):298
IKEDA JK. Clinical and epidemiological observations regarding the 1998 Kauai murine typhus outbreak, 60(1):7
IMOTO EM. Fat embolism, ARDS, coma, death: the four horsemen of the fractured hip, 60(1):15
INOUYE DK. Letters to the editor, 60(12):311
IRELAND JHE. 54-year old man with arthritis and diarrhea [Residents' case series], 60(6):158
IRELAND JW. 14-year-old girl with refractory seizures [Residents' case series],

60(12):321
ISSELL B. Your link to cancer information: the Cancer Information Service Center [Cancer research center hotline], 60(4):109
— Availability of clinical trials for Hawaii cancer patients [Cancer research center hotline], 60(6):161
IZUTSU S. Student profile: class of 2005 John A. Burns School of Medicine (JABSOM) [Medical school hotline], 60(11):299
JIM RTS. Case report: pseudo pseudothrombocytopenia, 60(4):108
JOHNSON EW. Out-patient parenteral antibiotic therapy (OPAT): clinical outcomes and adverse events, 60(2):31
KAMAKA ML. Teaching cultural competency [Medical school hotline], 60(7):187
— Guest editorial, 60(11):293
KASUYA RT. Medical education fellowship in the Office of Medical Education at the John A. Burns School of Medicine [Medical school hotline], 60(9):234
KAVOLIUS J. Giant multiple intraductal papilloma of the breasts: a case report and review of the literature [Case of the month], 60(3):60
KAVOLIUS JP. Surgical extirpation of a chest wall desmoid tumor: a case report [Case of the month], 60(6):156
KAYASHIMA R. Barriers to good end-of-life care: a physician survey, 60(2):40
KOLONEL LN. Major new grant in cancer epidemiology [Cancer research center hotline], 60(3):74
KURAHARA DK. Complementary medicine techniques to help reduce muscular pain in the pediatric rheumatic illnesses, 60(11):289
LAU WT. Improvement in quality of life after bilateral transthoracic endoscopic sympathectomy for palmar hyperhydrosis, 60(5):126
LE MARCHAND L. Etiologic research on lung cancer in Hawaii: the roles of smoking, phytochemicals and metabolic genes [Cancer research center hotline], 60(12):325
LEE JD. Improvement in quality of life after bilateral transthoracic endoscopic sympathectomy for palmar hyperhydrosis, 60(5):126
LEE L. Improvement in quality of life after bilateral transthoracic endoscopic sympathectomy for palmar hyperhydrosis, 60(5):126
MANEA SJ. Clinical and epidemiological observations regarding the 1998 Kauai murine typhus outbreak, 60(1):7
MASAKI K. geriatric medicine fellowship program at the John A. Burns School of Medicine, University of Hawaii [Medical school hotline], 60(5):122
— art of medicine [Medical school hotline], 60(10):266
MASKARINEC G. Researching nutrition and breast cancer [Cancer research center hotline], 60(10):267
MATSUMOTO C. Giant multiple intraductal papilloma of the breasts: a case report and review of the literature [Case of the month], 60(3):60
MIDDLETON CR. Of mice and mongooses .. a history of leptospirosis research in Hawaii, 60(7):179
MILLER D. Indigenous ways of healing guinea worm by the Sonninke culture in Mauritania, West Africa [Medical school hotline], 60(4):95
NAGOSHI MH. Role of standardized patients in medical education [Medical school hotline], 60(12):323
NAKASUKASA P. Kulia Program: psychiatric rehabilitation in Hawaii, 60(9):229
NAKAYAMA D. 54-year old man with arthritis and diarrhea [Residents' case series], 60(6):158
O'CONNER HK. Hawaii diet: ad libitum high carbohydrate, low fat multi-cultural diet for the reduction of chronic disease risk factors: obesity, hypertension, hypercholesterolemia, and hyperglycemia, 60(3):69
OKAMOTO J. Childhood disabilities in medical education at the John A. Burns School of Medicine (JABSOM) [Medical school hotline], 60(1):5
PAGLINAWAN L. Ho'oponopono, 60(11):297
PAGLINAWAN R. Ho'oponopono, 60(11):297
PEARSALL PK. On a wish and a prayer: healing through distant intentionality, 60(10):255
— Integrative health and healing: "looking in" to "left out" medicine, 60(10):257
— Are heart transplant recipients receiving cellular memories from their donated organ? A heuristic study, 60(11):282
PETERMANN G. Giant multiple intraductal papilloma of the breasts: a case report and review of the literature [Case of the month], 60(3):60
PREIS I. systematic approach to provider based disability management, 60(12):318
PRENTISS JE. Fat embolism, ARDS, coma, death: the four horsemen of the fractured hip, 60(1):15
RATLIFFE K. Childhood disabilities in medical education at the John A. Burns School of Medicine (JABSOM) [Medical school hotline], 60(1):5
ROBINETT H. Your link to cancer information: the Cancer Information Service Center [Cancer research center hotline], 60(4):109
SAKAI DH. Compassion in medicine [Medical school hotline], 60(3):58
— Medical education fellowship in the Office of Medical Education at the John A. Burns School of Medicine [Medical school hotline], 60(9):234
SASAKI DM. Clinical and epidemiological observations regarding the 1998 Kauai murine typhus outbreak, 60(1):7
— Of mice and mongooses .. a history of leptospirosis research in Hawaii, 60(7):179
SCOTT SA. Box jellyfish (carybdea alata) in Waikiki: their influx cycle plus the analgesic effect of hot and cold packs on their stings to swimmers at the beach: a randomized, placebo-controlled, clinical trial, 60(4):100
— Box jellyfish (carybdea alata) in Waikiki the analgesic effect of sting-aid, Adolph's meat tenderizer and fresh water on their stings: a double-blinded, randomized, placebo-controlled clinical trial, 60(8):205
SHIGEMASA S. Cancer research center of Hawaii: 30 years of progress in cancer research [Cancer research center hotline], 60(8):213
SHINTANI TT. Hawaii diet: ad libitum high carbohydrate, low-fat multi-cultural diet for the reduction of chronic disease risk factors: obesity, hypertension, hypercholesterolemia, and hyperglycemia, 60(3):69
— Integrative medicine approach to obesity and diabetes, 60(10):262
SHOMAKER TS. role of accreditation in medical education [Medical school hotline], 60(8):211
— Integrative medicine: an academic discipline? [Special contribution], 60(11):280
SINGH N. Surgical extirpation of a chest wall desmoid tumor: a case report [Case of the month], 60(6):156
SMITH PJ. systematic approach to provider based disability management, 60(12):318
SMYSER A.A. Hawaii's world by A.A. Smyser. 2000 [classical article], 60(4):86
STODD RT. weathervane, 60(1):22
— weathervane, 60(2):50
— weathervane, 60(3):78
— weathervane, 60(4):114
— weathervane, 60(5):138

— weathervane, 60(6):166
— weathervane, 60(7):194
— weathervane, 60(8):218
— weathervane, 60(9):242
— weathervane, 60(10):270
— weathervane, 60(11):302
— Notes from the HMA 145th annual meeting, 60(12):308
— weathervane, 60(12):338
TABRAH FL. Is there any evidence?, 60(10):259
— Energy fields in conventional and integrative medicine, 60(11):283
— use of pulsed electromagnetic fields (PEMF) in osteoarthritis (OA) of the knee preliminary report, 60(11):288
— [re: alternative medicine], 60(12):311
TAIRA DA. Patient characteristics and satisfaction for members using acupuncture services, 60(11):291
TAN SY. DNR orders in the OR, 60(3):64
THOMAS CS. Box jellyfish (carybdea alata) in Waikiki: their influx cycle plus the analgesic effect of hot and cold packs on their stings to swimmers at the beach: a randomized, placebo-controlled, clinical trial, 60(4):100
— Box jellyfish (carybdea alata) in Waikiki the analgesic effect of sting-aid, Adolph's meat tenderizer and fresh water on their stings: a double-blinded, randomized, placebo-controlled clinical trial, 60(8):205
TIM SING PML. Teaching cultural competency [Medical school hotline], 60(7):187
TOM T. Hepatitis C, diagnosis and management: a survey of practicing physicians in Hawaii, 60(6):148
TSAI NCS. Chronic Hepatitis C caused by a virus - fiction or for real?, 60(6):155
TUNGPALAN L. DNR orders in the OR, 60(3):64
VAREZ D. Opihi, 60(1):3
— Wa'a humu, 60(2):27
— Kuhi no ka lima, hele no ka maka, 60(3):55
— Laukia, 60(4):83
— Ilio, 60(5):121
— Pele and lehua, 60(6):145
— Halau wa'a, 60(7):173
— Aku boat, 60(8):201
— Ahi, 60(9):225
— Heihei kukini, 60(10):249
— E lanalana e, 60(11):277
— Ulu from Kanehunamoku, 60(12):307
VOGEL CW. Cancer research center of Hawaii: 30 years of progress in cancer research [Cancer research center hotline], 60(8):213
WONG LL. Organ procurement 1999-2000: how is Hawaii doing?, 60(12):314
WU M. Hepatitis C, diagnosis and management: a survey of practicing physicians in Hawaii, 60(6):148
YOKOYAMA HN. News and notes, 60(2):46
— News and notes, 60(3):75
— News and notes, 60(4):111
— News and notes, 60(5):130
— News and notes, 60(6):162
— News and notes, 60(7):190
— News and notes, 60(8):214
— News and notes, 60(9):239
— News and notes, 60(12):327
ZUNIN ID. Guest editorial, 60(10):254
— Complementary and alternative healing in paradise: the state of the state, 60(10):264

American Heart Association®
Fighting Heart Disease and Stroke

Help Your Heart Recipes

This recipe is intended to be part of an overall healthful eating plan. Total fat intake should be less than 30 percent of your total calories for a day — not for each food or recipe.

Ginger Broiled Fish

- Vegetable oil spray
- **2** pounds fresh or frozen fish fillets or steaks, about ¾ inch thick
- ¾ cup dry white wine (regular or nonalcoholic)
- **2** green onions (green and white parts), chopped
- **1** tablespoon light soy sauce
- **2** teaspoons grated fresh gingerroot
- **2** teaspoons prepared horseradish, drained
- **1** teaspoon acceptable* vegetable oil

Preheat broiler. Lightly spray a broiler-proof baking dish with vegetable oil spray. Put dish under broiler for 1 to 2 minutes.

Rinse fish and pat dry with paper towels. Cut fish into 8 equal portions. Arrange in a single layer in preheated dish.

In a small bowl, combine remaining ingredients, stirring well. Pour over fish.

Broil fish about 2 inches from heat for 5 to 6 minutes. Turn carefully and broil for 5 to 6 minutes, or until fish flakes easily when tested with a fork.

Serves 8.

*Use canola, safflower, soybean, sunflower, sesame, or olive oil.

Nutrient Analysis per Serving

115 kcal	Calories	**53 mg**	Cholesterol	**0 g**	Saturated Fat
19 g	Protein	**148 mg**	Sodium	**1 g**	Polyunsaturated Fat
1 g	Carbohydrates	**2 g**	Total Fat	**0 g**	Monounsaturated Fat
0 g	Fiber				

American Heart Association Cookbook, 6th Edition, ©1998. Reprinted with permission from Times Book, a division of Random House, Inc., New York.
Visit our Web site at: http//www.americanheart.org/.

Classified Notices

To place a classified notice:

HMA members.–Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in HMJ as space is available.

Nonmembers.–Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Physician Wanted

KAUAI– Kauai Medical Clinic is seeking a BC/BE General Surgeon to join a experienced General Surgeon in our 65-physician multispecialty group. Call 1:3 modern 181-bed community hospital. Excellent quality of life in a beautiful, safe, family oriented, rural community. Competitive salary, benefits and relocation package. Send/fax CV to: M. Keyes-Saiki, Kauai Medical Clinic, 3-3420 Kuhio Highway, Suite B, Lihue, HI, 96766-1098. Fax: (808) 246-1625. Phone: (808) 246-1621. E-mail: mkeyes-saiki@wilcoxhealth.org

Physician Wanted

KAUAI– Kauai Medical Clinic is seeking a BC/BE Noninvasive Cardiologist interested in adult clinical Cardiology. Candidates should also have an interest in consultative practice and experience in TTE, TEE and Stress Echo. Standard ICU procedures include Swanz Ganz and temporary pacemakers. Excellent quality of life in a beautiful, safe, family oriented, rural community. Competitive salary, benefits and relocation package. Send/fax CV to: M. Keyes-Saiki, Kauai Medical Clinic, 3-3420 Kuhio Highway, Suite B, Lihue, HI, 96766-1098. Fax: (808) 246-1625. Phone: (808) 246-1621. E-mail: mkeyes-saiki@wilcoxhealth.org

Physician Wanted

KAUAI– Seeking 2 BC/BE General OB/GYNs for Kauai Medical Clinic's 3 physician, 3 Certified Nurse Midwife collaborative OB/GYN team. Kauai Medical Clinic is a 65-physician multispecialty group affiliated with Wilcox Health System's 181-bed community hospital. Our opportunity offers excellent quality of life in a safe, beautiful, family oriented, rural community. Competitive salary, benefits and relocation package. Send/fax CV to: M. Keyes-Saiki, Kauai Medical Clinic, 3-3420 Kuhio Highway, Suite B, Lihue, HI, 96766-1098. Fax: (808)246-1625. E-mail: mkeyes-saiki@wilcoxhealth.org

KAUAI– Kauai Medical Clinic is seeking a BC/BE Internal Medicine physician for our new In-house Nighttime Physician program. Approximately 40-60 hours per week. Kauai Medical Clinic is a 65-physician multispecialty group affiliated with a 181-bed community hospital. Excellent quality of life in a beautiful, safe, family oriented, rural community. Competitive salary, benefits and relocation package. Send/fax CV to: M. Keyes-Saiki, Kauai Medical Clinic, 3-3420 Kuhio Highway, Suite B, Lihue, HI, 96766-1098. Fax: (808) 246-1625. Phone: (808) 246-1621. E-mail: mkeyes-saiki@wilcoxhealth.org

For Sale

TREADMILL/EKG– Burdick/Spacelabs Quest Stress System w/CPU, monitor, treadmill & cart. 1 yr old rarely used. Assume low monthly lease or buyout @ $16,500.

SIGMOIDOSCOPY– Olympus Unit complete w/cart & supplies. $2,800. For questions call Terry (808) 885-9606 Big Island or e-mail: drlam@lava.net.

Practice Available

PRACTICE AVAILABLE/URGENT– Part-time practice in Kailua in Medical Building. Fully furnished and equipped space. Available in January 2002. Please make inquiries before December 5 and after December 20. PH: 592-0520 or 266-0500.

Employment Wanted

GP/ANESTHESIOLOGIST LOOKING FOR JOB– Completed USA Residency 1976, comfortable in all fields of Medicine & Surgery Assisting. Locum, Permanent, P/T consider short or longterm. Inquire on E-mail at <d_kosie@yahoo.com.au> and get my cv back fast.

Aloha Laboratories, Inc.
...When results count

CAP accredited laboratory specializing in Anatomic Pathology
Quality and Service

David M. Amberger, M.D.
Laboratory Directory

Phone: (808) 842-6600
Fax: (808) 848-0663
E-Mail: results@alohalabs.com
http://www.alohalabs.com

WE COLLECT PAST DUE ACCOUNTS

Only 25%* fee for Health Care Firms!

Why give up more!

Monitor Accounts Online

Wood & Tait

HI Collection & Detective Agency
Staff on Kauai, Oahu, Maui, & Hawaii
http://www.woodtait.com

739-0433

jwood@woodtait.com

*Applies to accounts assigned during this promotion; no restrictions as to dollar size or age of accounts. Fee will increase to 50% if litigation or forwarding required; you will receive a contract.

The Weathervane Russell T. Stodd MD

If Your Tourist Glaucoma Patient Seems Slightly Stoned...
Unlike the United States, Canada has decriminalized the possession of marijuana for medicinal purposes. The regulations went into effect in July 2001, despite objections from the Canadian Medical Association. The CMA argued that the rules place doctors in an "untenable position." They now must counsel patients about the risks and benefits of a compound which they do not know and about which they have little scientific information. They can hardly give proper "informed consent" and fear that the regulations will damage the therapeutic relationship with patients. Some patients may use the doctor as a conduit for obtaining recreational marijuana by claiming a benefit for any medical condition, but hey stay cool, doc, it's ooohkay.

At Times, A Certified Letter Is Really Cheap.
A law student at the University of North Carolina was delusional and possibly psychotic, so the dean of the law school referred him for psychiatric evaluation. The psychiatrist cared for him on a regular basis with repeated visits and medications. His grades improved and his mental disorder was under control. The doctor advised the patient that he planned to retire at the end of the school year. In June, the doctor repeated that he was retiring from practice, and tried to refer the patient for further care. The student refused referral, stating that he wasn't sure where he would spend the summer. The doctor advised him to seek another physician, and to continue his drug therapy. Apparently, there was no additional attempt to assure continued medical care. The patient discontinued his medication and did not seek another psychiatrist. Eight months later he became profoundly psychotic, shot four people, two of whom died, and the patient was wounded by a policeman in a gun fight. He remains in a state-run psychiatric facility. He brought a law suit against the physician for failing to sufficiently stress the need for additional care, and was awarded $500,000 by a sympathetic jury. Liability lesson - there's more than one way to abandon a patient.

Instant Gratification Takes Too Long.
Eli Lilly has a new drug, Xigris (rhymes with tigress), said to be the most promising drug to fight sepsis which has come along in decades. When (not if) approved by the FDA, the drug promises to become the standard of care for severe sepsis, but here is the problem. The drug comes with an astronomical price tag, variously estimated between $1,000 and $10,000 per dose! According to studies, Xigris would save 20% of the 225,000 patients who die each year from sepsis, and no other drug has a similar effect. Hospital gatekeepers will try to ration the drug, but there is essentially no comparable medication. Fearing lawsuit, hospitals and doctors will surely be obliged to prescribe Xigris. Of course, the other side of the argument is that the drug will save money by shortening hospitalization, and cause reduction in hospital days. Since *Lilly's* exclusive patent on Prozac expired in July, they are delighted and expect the drug to be just what the doctor ordered.

Don't Worry About Your Heart. It Will Last All Your Life.
Considering the events of September 11th, it seems trivial, but the airlines have studied the cost effectiveness of having automated external defibrillators (AEDs) aboard every large capacity airplane. Cardiac arrest on a passenger aircraft is almost always a fatal event due to delays in emergency medical care. Survival rates are substantially higher than those achieved by emergency responders when AEDs are used by trained laymen. In April 2001, the FAA issued a rule requiring all commercial aircraft with at least one flight attendant, to carry AEDs by 2004. Some airline industry observers have questioned the appropriateness of the FAA ruling, but the study generated from Stanford University reported in JAMA, verified that quality-adjusted life-year (QALY) gained, more than offsets the cost.

Look At Your Dog. If He's Fat You're Not Getting Enough Exercise.
Do you want to know about your vital signs during exercise? The market place is increasingly filled with "biometric" gadgets primarily designed to target the super healthy. *Nike* has a heart monitor wrist watch which will help athletes achieve peak performance. *BodyMedia* is marketing an armband that monitors vital signs by receiving data and then transmitting the information to a personal computer. *Agilent Technologies* is serving a different population by monitoring patients with congestive heart failure. Their electronic line measures weight, blood pressure, pulse and electrocardiogram readings, and links the data between patients at home and remote nursing stations. To date, the sickness side of the market seems to be more widely used because patients are willing to pay for management of disease. Finding people willing to pay for the "wellness" gizmos is a smaller number.

The Data Bank: A Great Idea With Only One Fault—It Stinks.
Fifteen years ago an Oregon Congressman, Ron Wyden (now a senator), won passage of a bill to create a National Practitioner Data Bank (NPDB). The stated intent was to track bad doctors who leave town when their sins and transgressions catch up with them. Two basic areas would provide the information: malpractice suits, and hospital or health plan disciplinary actions for incompetence or misconduct. However, the NPDB is a useless failure. The value of lawsuits as a measuring device has long been known to be unrelated to quality medical care, and now investigators for the Inspector General's Office for HHS, have reported that hospitals and HMOs rarely report any adverse action. Cynthia Grubb, HHS acting deputy director of quality assurance, stated, "the requirements are spelled out. Hospitals or health care entities must report adverse actions or face penalties." In fact, it rarely happens, and no hospital or health plan has ever been sanctioned. 84% of more than 1400 health plans and 60% of hospitals have never reported a single adverse action. Why not? Any adverse report invariably brings a lawsuit from the doctor, and squaring off against a skilled trial attorney often proves a daunting task. Ultimately, the doctor offers to resign if no report is made, the health plan or hospital is delighted to accept the resignation, the doctor leaves town, and the report goes into the round file not the data bank. The more things change, the more they remain the same.

Success Is A Great Deodorant.
The Veterans Affairs Medical Center in Lexington, Kentucky, has a policy of "extreme honesty." When a medical error is found, the patient and family are informed immediately, including events of medical negligence. The hospital averages about 14 cases a year where payments are made, which is high for a VA hospital. But the good part is that the average payout is only $15,000 where the average in the VA system is $100,000. "People don't stay angry when they are treated honestly and respectfully," said Steve Kraman, M.D. the chief of staff. Often patients don't even get an attorney. Moreover, some have collaborated with the hospital in patient safety efforts to see that similar errors don't keep happening. Would such a system work in the private sector? Attorneys are skeptical (what a surprise!), but some liability insurers and private hospitals are studying the Kentucky program.

Of Course Robin Hood Robbed Only The Rich. The Poor Don't Have Money.
In Indiana, four men broke into a veterinarian's office to steal the narcotic oxyContin. Their scheme went awry when instead they took oxytocin from the doctors pharmacy shelf. Instead of producing an opium high, the drug induces labor as well as produces lactation and a mothering instinct. The four were arrested, possibly when they were caught enrolling in childbirth class, or maybe remedial reading.

ADDENDA
- ❖ One in eight U.S. workers has at one time worked for McDonald's.
- ❖ The original computer mouse was called an "X-Y position indicator."
- ❖ If you fell off the top of Mt. Everest, it would take two and 1/2 minutes to reach sea level.
- ❖ The airlines have furloughed so many people that the FBI had to be called in to lose the luggage.

Aloha and keep the faith —rts■

Contents of this column do not necessarily reflect the opinion or position of the Hawaii Ophthalmological Society and the Hawaii Medical Asociation. Editorial comment is strictly that of the writer.

introducing

the only daily facial moisturizer containing Parsol® 1789.

Cetaphil® Daily Facial Moisturizer with SPF 15



- Filters UVA and UVB rays for maximum sun protection
- Offers gentle moisturization for all skin types
- Can be worn under makeup — lightweight and non-greasy
- Non-comedogenic
- The OTC Skincare line most recommended by dermatologists*

The final word in serious skin care. Cetaphil®.

www.cetaphil.com

3198 021

* Data on file, Galderma Laboratories, L.P. ©1999 Galderma Laboratories, L.P. GALDERMA is a registered trademark. CET-249-1199
Patent and trademark rights for Parsol® 1789 owned by Givaudon-Roure Corp.

GALDERMA

Hawaii medical journal
v. 60
no. 12
December 2001
Received on: 01-31-02
Brown University Library
SCI



NO RATE INCREASE IN 2001

MIEC

Medical Insurance Exchange of California

6250 Claremont Avenue
Oakland, California 94618
800-227-4527
www.miec.com

HAWAII CLAIMS OFFICE:
1360 South Beretania Street,
Honolulu, Hawaii 96814

Rated "A" (Excellent) by A.M. Best

Sponsored by the Hawaii Medical Association

THE SAFEST ROUTE IS
WITH AN EXPERIENCED GUIDE.

In Hawaii, that's MIEC. We are the West's first physician-owned, not-for-profit professional liability insurer. For more than a quarter century, we've protected doctors with financially secure coverage. We're also known for our unsurpassed, consistent track record of returning dividend credits to policyholders, when operating results permit. We've returned over $200 million.

Professional liability insurance is a long-term business relationship. At MIEC, we take this commitment seriously.

Choose the genuine original, MIEC.


3 1236 09028 6488

NONCIRCULATING

PERIODICAL